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9 september 1956

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p/a community buildings

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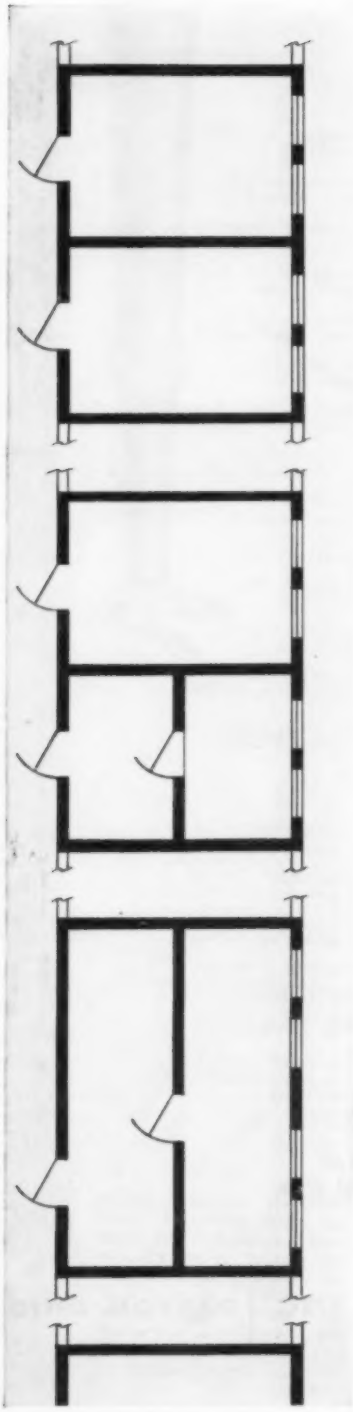

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September 1956

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office practice

p/a news survey

community buildings

progressive architecture in America

fields of practice

selected details

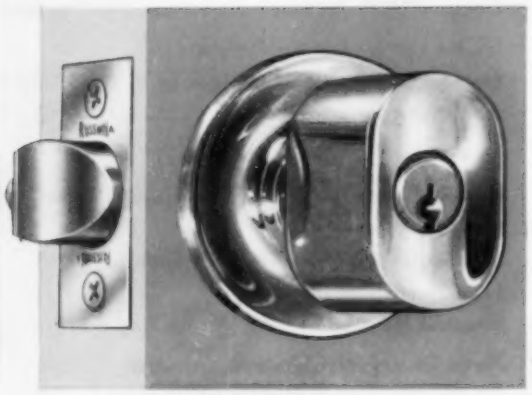
interior design data

cover: **Coliseum** by A. G. Odell, Jr. & Associates (see page 111)

5 **It's the Law** by Bernard Tomson
7 **Mechanical Engineering Critique** by William J. McGuinness
9 **Advertising for Architects**
13 **Views**
97 **Lutheran Brotherhood Builds Minneapolis Home**
100 **News Bulletins**
102 **Washington Report** by Frederick Gutheim
103 **Louis Henri Sullivan Centenary**
104 **Financial News** by William Hurd Hillyer
107 **Parish Library: Natchitoches, Louisiana**
Barron, Heinberg & Brocato, Architects
111 **Auditorium and Coliseum: Charlotte, North Carolina**
A. G. Odell, Jr. & Associates, Architects
122 **House: Weston, Connecticut**
Huson Jackson, Architect
126 **Laboratory Equipment** by Edward Grey Halstead
138 **Our Architectural Heritage**
139 **Cleveland Arcade, 1888-90: Cleveland, Ohio**
John M. Eisenmann, George H. Smith, Architects
141 **School Design: Nichols & Butterfield, Architects**
144 **Elementary-School Addition:** Amherst, Massachusetts
146 **Junior High School:** Rocky Hill, Connecticut
150 **Regional High School:** Litchfield, Connecticut
155 **Spec Small Talk** by Ben John Small
156 **Window Wall**
157 **Deck Railing**
Office Suites by Louise Sloane
159 **Advertising Agency: New York, New York**
Carson & Lundin, Architects
162 **Architects' Office: New York, New York**
Copeland, Novak & Israel, Client-Architects
166 **Interior Design Products**
170 **Manufacturers' Literature**
183 **Products**
192 **Reviews**
256 **Jobs and Men**
266 **Advertisers' Index**
268 **P.S.**

New Russwin Designs

in doorware fashioned to fit the hand



THE ERA DESIGN . . .
an interesting departure from the conventional knob styling. The Era knob is not only pleasing to the eye and easy to grasp, but also unusually easy to turn.

THE TEMPO DESIGN . . .
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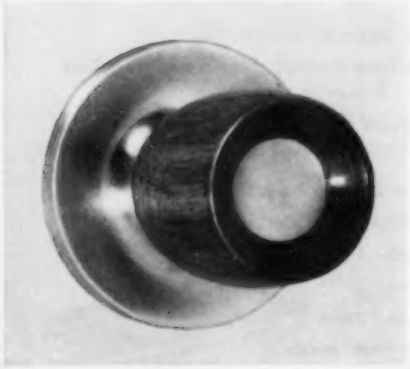

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It's the Law by Bernard Tomson

P/A Office Practice ***Article beginning a discussion of the revision and up-dating of the Standard AIA Contract Forms.***

The necessity for revision of the AIA client-architect agreement forms has long been discussed. This column has repeatedly emphasized the importance of a properly drawn contract between Architect and Owner (*February 1948 P/A, February 1949 P/A, March 1949 P/A, April 1949 P/A, May 1949 P/A, June 1949 P/A, June 1950 P/A, October 1950 P/A, February 1951 P/A, March 1951 P/A*). In order to avoid misunderstanding, I wish to emphasize that it is my position that any "form" is too static to cope with the combinations and permutations that result from the individual differences found in the relationships of the Architect, the Client, the project, the Contractor, the municipality, the dynamic society we live in, and so on, *ad infinitum*. But if there must be "forms," let them be better, rather than worse ones.

The Office Practice Committee of the AIA has recognized the need for the revision of the forms and has prepared a draft revision of the form for use where a percentage of the cost of the work is used as a basis of determining the fees to be paid to the Architect. Many of the recommended changes are highly desirable and long overdue. Some of the changes appear to put additional burdens upon the architect, or do not go far enough in protecting the Architect's interests. It is important that the members of the profession analyze the suggested changes, to determine whether additional improvement in the forms is required.

The Office Practice Committee, in commenting on its recommended changes, pointed out that the only practical way to improve the Architect's status in relation to the Client, is to include in the form contracts those items which will establish a favorable position for the Architect whether common practice or not. The Committee stated:

"Since it is almost impossible to add an item favorable to the Architect in a printed agreement the Committee felt that generally all items possible should be included. Any stipulation can be omitted as a concession to the Client simply by striking it out. Upgrading the Architect's treatment by Clients must come by making it possible to include items in the agreement not now entirely common practice."

The approach of the Committee in this respect is sound and the revised forms should be analyzed with this goal in mind.

Perhaps the most important part of the agreement between Client and Architect (at least from the Architect's viewpoint) relates to those provisions which deal with the Architect's compensation. The first article in which I discussed this subject ("You and Your Client," *February 1948 P/A*) emphasized the desirability of (1) a retainer fee payable at the time the agreement is signed and constituting a minimum fee; (2) periodic payments during all stages of the work; and (3) a provision in percentage of cost contracts that the architect's estimates are to be binding for the purpose of determining the amount of the respective payments until actual costs are finally determined. Does the revised form adequately protect the Architect in respect to his compensation?

The unrevised AIA form did not provide for a retainer, nor for pericdic payments during all stages, nor for the Architect's estimates to be binding for the purposes of determining the amount of periodic payments. In the absence of such provisions, the Architect can often be placed in the dangerous position of financing the Client.

The proposed revision to the present form contract is a substantial improvement. It provides for a retainer of 10% of the total fee to be paid in advance. However, some of the value of this provision is lost as the retainer is to be applied against the first phase of the Architect's services ("Schematic Phase") rather than the final payment of the Architect's fee. Further, it is not provided that the retainer shall be the minimum compensation under the contract. This would be of particular importance if the Owner should abandon the project and terminate the Architect's services in a very early stage after utilizing a substantial amount of the architect's time. A suggested clause would be as follows:

"A retainer fee of ———— shall be due and payable upon the signing of this agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the architect and shall be applied on account of the final payment for the architect's fees."

The proposed revision provides for monthly payments in all stages of the Architect's services in proportion to the value of the services rendered. This, again, is an improvement over the present form. However, the value of monthly payments, at least during the preliminary stages, must be based on an estimate of cost. The revision is silent on how this estimate is to be made. The Architect would be best protected if his estimate of cost was binding until actual costs were ascertained, at which time his fee would be adjusted. A suggested clause is as follows:

"Where the Architect's fee is determined by a percentage of cost, his estimate of such cost is made for that purpose only and such estimate shall be conclusive in determining payments to the Architect until costs are finally ascertained upon completion of the Project, at which time an adjustment will be made based upon actual cost."

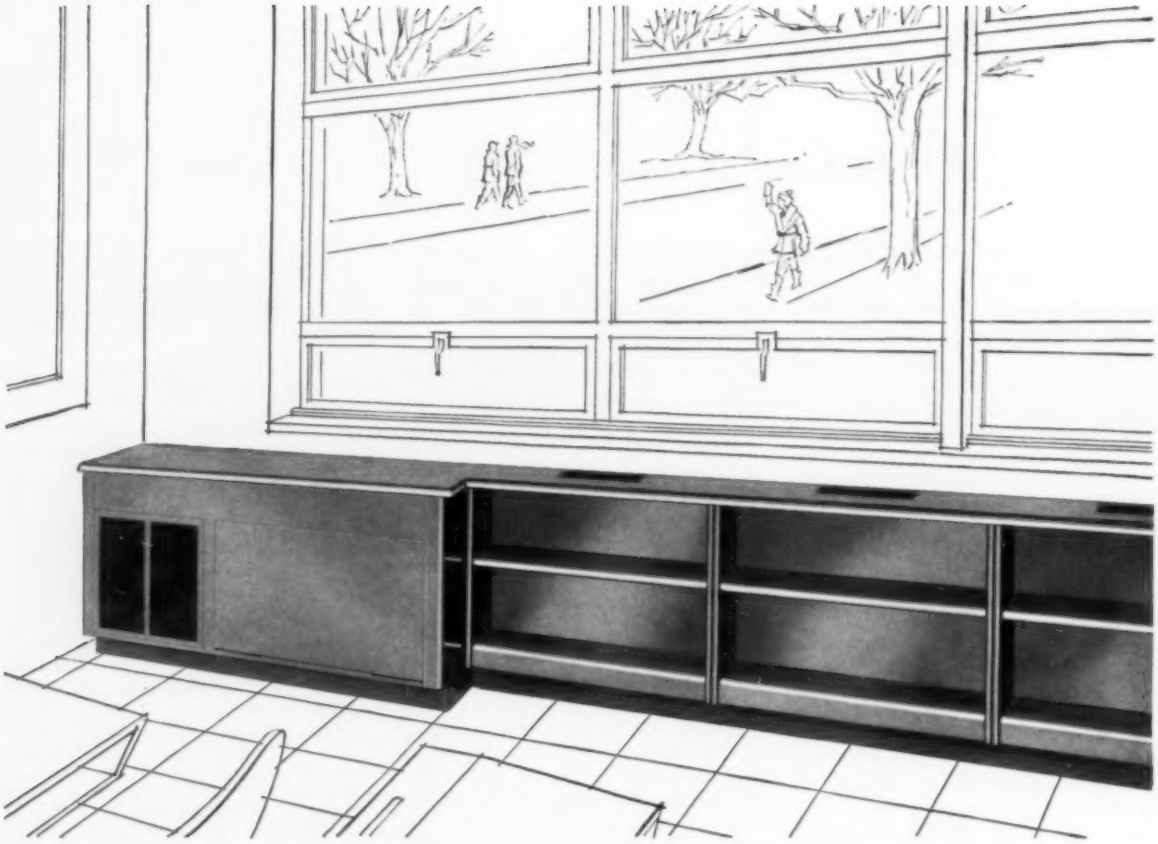
In a contract where the Architect's fee is measured by the cost of the work, the definition of "cost" is extremely important. The Committee has changed that definition in its suggested revision by adding the following language:

"It shall be the lowest bona fide bid if bids have been taken or shall be based on estimate of cost for the work as submitted by the Architect."

This language may in some instances have the effect of reducing the Architect's fee, as the actual cost of the work may exceed the lowest bona fide bid. In this respect, the desirability of this change is questionable. However, that part of the additional language which provides for the cost of the work to be based on estimate of the Architect in the event bids have not been taken is a definite improvment in the original clause. It would be even more effective if it provided that such estimate is conclusive.

Provisions relating to the compensation of the Architect for the performance of extra services have also been revised by the AIA Committee.

These changes, together with other changes made in the Client-Architect form agreement, will be discussed in next month's column.



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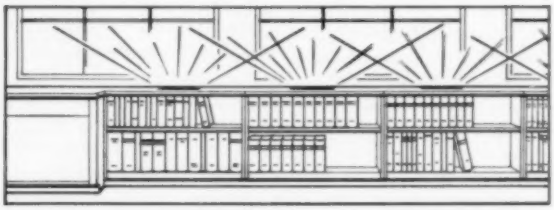

Util-i-Duct sections assure proper air distribution for complete classroom comfort and provide bookshelf space.

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Please send me complete information on the Norman gas-fired, forced air Schoolroom Heating and Ventilating System.

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Mechanical Engineering Critique

by William J. McGuinness

P/A Office Practice *column on mechanical and electrical design in architecture is devoted this month to the subject, Improvement in the Heat Pump for use in Northern Climates.*

A new application of the compound compression principle to the problem of heating with the air-to-air heat pump in northern climates has proved successful. This may be the last step in making this combination heating-cooling device fully acceptable in the north. An installation of the improved design is now being made in the new building for the Ballinger Company, Philadelphia, Architects-Engineers, after successful results in the Heironimus Store, Roanoke, Va. The principle as applied to the heat pump has been developed by Robert G. Werden of the York Corporation. Application has been made for patents. Suitable now for use in larger buildings it may be adapted within a year for residences.

Heat pumps use electricity for compressors, fans, and pumps, and take the rest of the energy required for heating or cooling from the air, ground water, or the ground itself. With proper efficiency this can be a most economical way of tapping nature's resources. A refrigeration cycle for air conditioning disposes of its heat to the outdoor air or to one of the other two media. In winter, either water, air, or the ground is refrigerated in order to collect heat. Thermally, ground water and earth below the frost line, both of which are seldom less than 50F are good sources of heat in winter. Air, often at zero or less when the greatest indoor heating problem occurs, is less valuable. Other disadvantages, however, attend the first two. Water purchased from a municipality and wasted to the sewer is either too expensive or too great a burden on the water supply and drainage systems. The cost of obtaining ground water privately and dispersing it again to the earth is great. Treatment problems sometimes occur when water is hard or acid. Using the earth as a thermal reservoir requires the imbedment of an extensive coil system which is costly and demands space. It is virtually impossible in cities.

Because of these difficulties with earth and water, air has been most often used. It becomes inefficient, however, when the outdoor temperature drops below freezing. The replacement of the usual single-stage compression by double-stage has solved this problem *(Figures 1 and 2)*. Werden compares single-stage operation to throwing a tennis ball four stories and double-stage to throwing it two stories where an assistant throws it the remaining two. In any case, the new equipment operated in severely cold weather with 67 percent more output with less than half the input. It eliminates the electric resistance heating which was so commonly chosen to supplement air-to-air heat pumps at low outdoor temperatures. Because electric-resistance heating is often three times as costly as gas or oil, the use of air-to-air heat pumps has been largely confined to the south.

This interesting new development promises an extension of the use of the heat pump. An appraisal of its qualities is indicated.

Space: Heavy, water-filled boilers are eliminated. The equipment can be placed anywhere; in the Heironimus Store, it was in the penthouse.

Stack, fuel storage: Architects have been trying for years to get rid of the stack. Perhaps it is on its way out since none is required with the heat pump. Fuel storage and combustion problems can be transferred to the power company.

Initial cost: At least in the cases of the two buildings mentioned, the cost of installation was less than the combined cost of separate heating and cooling systems. It is hoped that the residential trend will be similar.

Operating cost: Experience to date shows the cost of operation as distinctly less than the combined expense for separate heating and cooling. No change is expected in this for locations as far north as Canada.

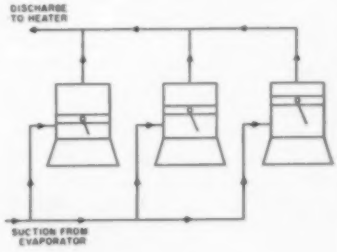
Municipal interest: Absence of smoke and fumes. Less trucking of fuel.

Utilities interest: A winter electric load to balance the summer demand for air conditioning power.

Dividend for owner: The electric demand places the consumer in a lower rate bracket which reduces his bill for power for other purposes.

General public interest: Any efficiency conserves our dwindling petroleum reserve.

Figure 1—schematic flow diagram of a conventional heat pump utilizing single-stage compression. For summer cooling, or for heating in temperate climates, single-stage compression is adequate. But in weather much below freezing, the compression ratio rises to a point that makes single-stage compression impractical for developing enough heat—requiring use of supplementary and expensive electric-strip heating.



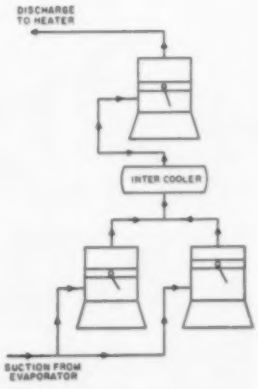


Figure 2—compound, or multistage compression is used in new heat-pump system to lower compression ratios and increase output during very cold weather, thus providing comfort heating for a building without the use of any supplementary heating. The new heat-pump system automatically switches from single-stage compression to compound compression when the outside temperature drops below a certain point.

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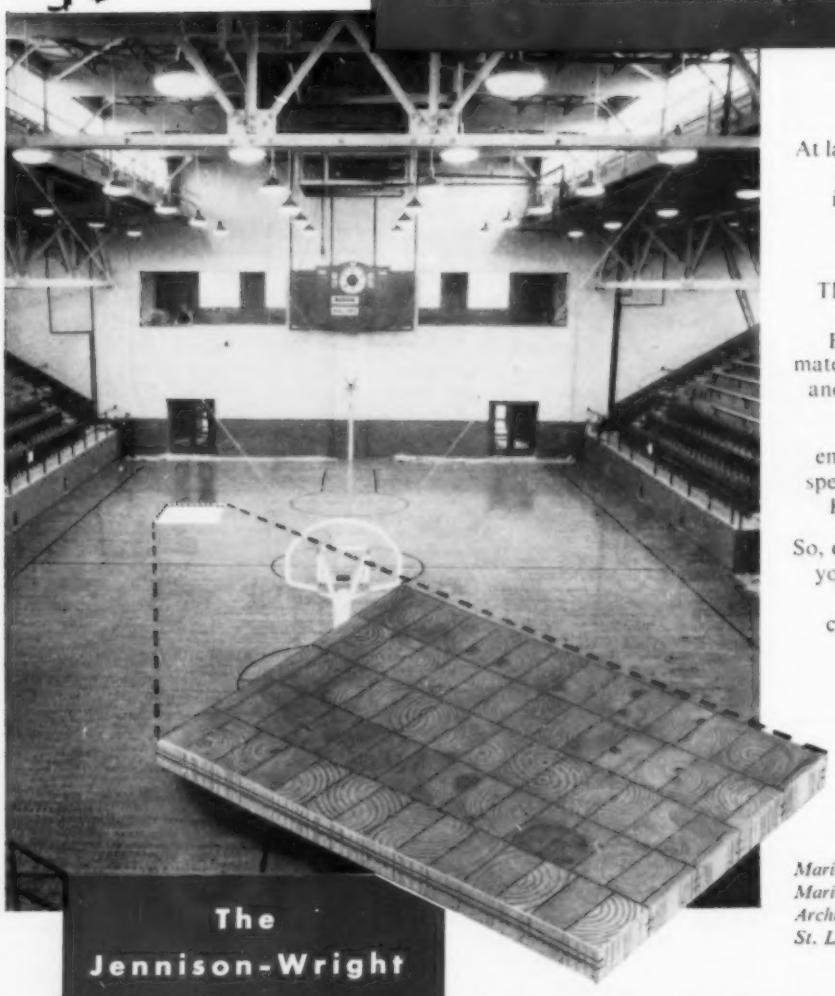

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Advertising for Architects

This P/A Office Practice article discusses a public-relations program of benefit to the architectural profession, developed and being carried out by New Castle Products, Inc., manufacturers of Modernfold Doors.

Architects can't advertise, and yet they want the general public to know more about their services. The AIA has a public-relations program, backed by a budget which seems large to the architects, and yet it can't begin to do the big, paid promotional job that other service and professional groups have undertaken.

A successful public-relations program involves many activities, the first of which is producing newsworthy accomplishment. The techniques of bringing an important story before the public by the written word, radio, and TV, and even word of mouth, are well known, and always possible of accomplishment through well planned, adequately financed, efficiently conducted activity. But one frustration continually annoys the architect; it is the perennial difficulty in obtaining reasonable newspaper coverage in the hometown local paper. Often, this is the fault of the architects themselves; too often, there is not full realization of the fact that *real news* must be supplied, and supplied in a way that is usable. But often, too, it is due to a feeling, usually by less progressive newspapers, that news of architecture is "not backed up by advertising," or, on the part of more progressive papers, a lack of full understanding that architects control, directly or indirectly, a huge volume of business in products which *are* advertised extensively, both on the national and the local level.

Much as we may dislike and disapprove this attitude on the part of a large segment of the American press, we still must live with the fact. Is there any way to demonstrate the local news value and the local business importance of the architect? Is there any solution to the problem of securing (architectural) editorial coverage, within the budget and the ethical code of our profession? Finally, is there any method of moving architectural groups from their own occasional lethargy in this area? The Modernfold Door people (New Castle Products, Inc., manufacturers, and their local distributors and agents in many cities) believe that they have found an answer; and P/A's Editors, after reviewing the program and its results, feel that here is an idea which benefits everyone, steps on no toes, and is capable of much greater expansion and wider use.

The program is basically a means of stimulating newspaper advertising by manufacturers of building products, in a way that will plug the architect without architects' endorsement of products, in as close collaboration with the AIA Chapter and the Producers' Council Chapter as possible—in response to which advertising revenue, the newspaper will be more inclined to devote editorial space to news of architecture. At first blush, this might sound cynical—and it might even sound ethically dangerous—but it has worked, and worked beautifully to everyone's benefit, in some 20 cities.

The idea was the brainchild of Arthur Heineman, now sales manager for MacArthur & Burke, Inc., Modernfold's distributor in Chicago (where the program is now underway). Heineman and Modernfold are completely sold on two things: the importance of the architect in his community; and the basic value of the architect's good will in selling any line of building products. It seemed to Heineman that these two beliefs met at an obvious point: the need for a company like his to *promote* the architect to the community. His first big try at an integrated program was in Pittsburgh. New Castle Products immediately saw the possibilities of extending the idea, and other local distributors have carried it out (some, perhaps, more successfully than others).

The program is in four steps—all *local* in origin and result. (In this way it differs from other institutional, pro-architect, advertising campaigns, such as Minneapolis-Honeywell's.) *Step One* is what Heineman calls the "spearhead ad"—an advertisement run by the Modernfold distributor (similar to the one illustrated) which plays down the company so far that one architect wrote, "I could scarcely find your name!" Before this is run, conferences are held with AIA Chapter representatives, the whole program is outlined and, of course, the coming benefits to the local profession explained. If *objective material* for inclusion in this first ad can be provided by the Chapter (in Chicago winners of the joint Association of Commerce and AIA Honor Awards were shown) so much the better.

Step Two involves bringing in other Producers' Council members, who are easily persuaded to do similar advertising of their own; and further meetings with the architects, perhaps the Chapter executive committee. By this time, experience shows, the architects and manufacturers are beginning to realize that an unusually beneficial relationship is developing.

In *Step Three*, the total program is unfolded to the newspaper where the original ad is placed. There are conferences not only with the newspaper's advertising department (the possibility of a special section with a decent number of ads is very appealing), but also with the editorial staff (there is good, interesting, story material promised which, for once, will be backed up by advertising). The newspaper itself begins to take over at this point; the advertising salesmen know who the prospects are for ads, and, lo and behold, the editors *go to the architects* for news.

Step Four—the actual publishing of ads from many distributors as well as editorial copy on architecture—may vary from use of material scattered through the paper to a unified "special feature." One big splurge is not the end, however. It has been the experience in a number of cities that the newspaper selected for the experiment sees future and continuing possibilities so clearly that good editorial coverage

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Advertising for Architects

of architectural activity (and mention of the architect's name in published material) becomes policy for that paper. Furthermore, competing papers begin to see missed opportunities, and want to get into the act. (In Chicago, a rival paper called Heineman to find out "what was up" a half hour after the edition of the *News*, carrying the "spearhead ad," hit the streets.)

The program, in its entirety, has worked best where there has been full understanding and collaboration by all the groups involved. The architects cannot hope to sit back and have all this done for them with no effort and no response on their part. Letters of appreciation and approval, sent to individual suppliers, are necessary ammunition; there is nothing unethical in sincere gratitude for an objective service rendered to the profession.

In investigating results of the campaigns already conducted, P/A has found everyone seemingly pleased. The newspapers obviously benefit. The roster of architects who have applauded the results is an impressive one. The Chicago AIA Chapter's Public Relations Committee, through its Chairman, Edward Grey Halstead, reported that it had "unanimously voted to commend" the activity. Levon Seron, of Joliet, Ill., says, "It is just this kind of sensible co-operative thinking that makes for better relationships . . . in order to render the best of service to the owner." From Pittsburgh, Lamont H. Button comments, "As one of the architectural profession, I feel a debt of gratitude for a pioneering idea that may snowball into a crusade. . . . "

The Chicago Producers' Council Chapter puts it this way: "One of the most pressing needs of today is public relations in behalf of architects and architecture. No paid media are available [to the architect], and media people find it not too profitable to concern themselves over his plight. . . . Our Council, following the lead of other aggressive Councils in the country, has found a suitable plan in keeping with all established ethics, whereby we can with one fell swoop reverse this trend."

And finally, although New Castle is almost leaning over backwards to avoid any hint of selling its product in this program, the intangible value of good will on a local basis has impressed every distributor who has had a part in the program. W. M. MacArthur, President of MacArthur and Smith, Inc., in Chicago, comments, for example, that "this program seems to have given our architectural sales as well as our prestige a resounding boost. Its value to us as a jobber has been immeasurable." And R. H. McConville, New Castle's Merchandising Manager, says, "It proves again that, from a national program a local version can be evolved—from which everybody gains and nobody loses."

The thing that impresses most architectural observers about the program, as it has already been developed, is the fact that it could be promoted and used by a public-relations arm of an architectural society itself. An extension of the idea could well be carried out on a regional basis (as it has been, tentatively, in Texas) and perhaps even nationally—although the benefit of *local* promotion of the architect would then be lost. It could certainly be a continuing joint AIA-PC activity in nearly any area. The New Castle experience indicates that almost the only requisite is for someone to co-ordinate and carry through the entire program. Local representatives of the Modernfold organization are well versed in the program, and willing to help launch it in any community. Although there are certain benefits in having an individual sponsor and activator—primarily in avoiding long and cumbersome parliamentary procedures in both AIA and PC Chapters—it would nevertheless seem to be a productive activity for the professional public relations counsels now employed by many AIA groups.

A summary, then, of the advantages of this program seems to be five:

1. It is a method of "merchandising services" in keeping with present-day trends in other professions.
2. It is a public-relations activity ethically "safe" and at the same time effective and remunerative for all.
3. It is an activity of sufficient value to manufacturers and distributors for them to finance it.
4. It is designed to alter present media attitudes among local newspapers regarding editorial coverage of architecture and editorial credit to architects.
5. It could be a progressive means of attracting more members to AIA Chapters and strengthening the Chapters' own services to the profession.

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Architects Organized As National Association
Architects' Work Shown in New Buildings
Redevelopment Program Reflects Architect's Role
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The photograph at the right shows how Mr. Frank Lloyd Wright incorporated Anemostat Straight Line All-Air High Velocity Units in the ceiling design of the Price Tower at Bartlesville, Oklahoma. The conditioned air is supplied through continuous Straight Line Diffusers located on two sides of the suspended ceiling. The diffusers do not only have vital functional use, but also add to the esthetic appearance of the architect's design.

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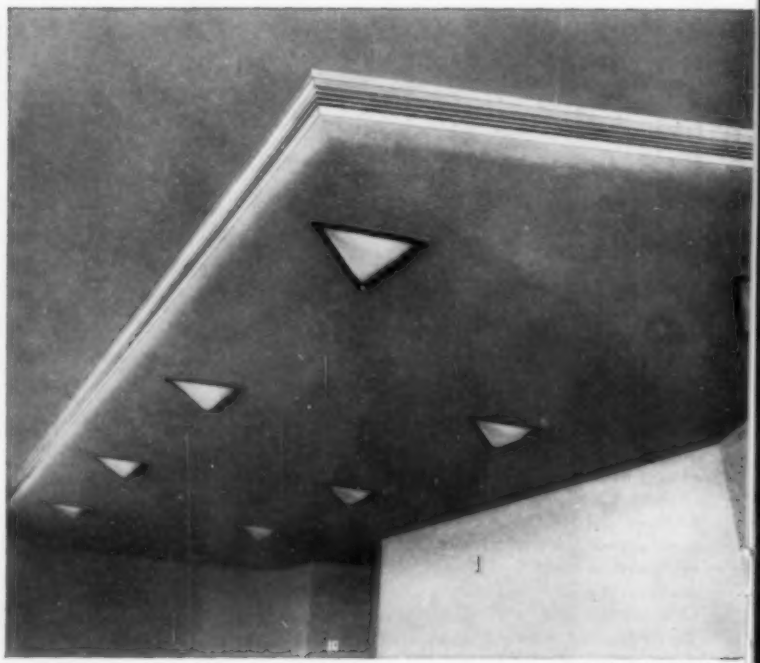
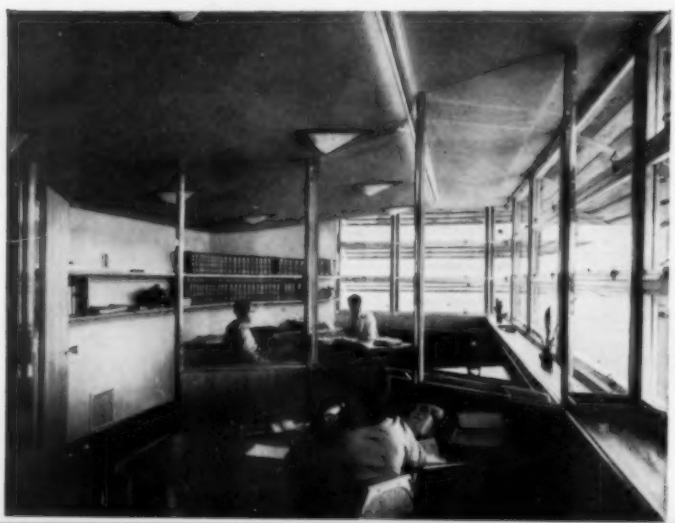


PHOTOS: JOE D. PRICE



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architectural education
can "prediction" become actuality?

Dear Editor: I was very interested in Ernest Wright's prognosis of things to come in architectural education during the next twenty years (*"Architectural Education—A Prediction," May 1956 P/A).* I share some of his views and hope with him that teaching methods can be so directed that the student will develop a sense of space as well as structure and esthetics—we might say of architectural reality. Whether this should be accomplished by continuous actual building as he suggests, or through a return to the apprentice system also proposed, or by completely new and untried methods, must in the last analysis be solved variously by each school with full consideration of its own location, facilities, and philosophy. Bill Wurster once said that an architectural school should be so organized as to utilize the strengths of the parent institution. I heartily believe that this is sound policy. Since our architectural schools are found in technical institutes, private universities with strong and broad liberal arts traditions, state colleges and denominational institutions, in urban locations and in college towns, it seems good common sense to shape the school to make best use of its situation. I am keenly aware of how variable these problems are, having taught for a considerable time in a large urban university before assuming the Headship of a state school in a college town. Some sort of clinical arrangement employing students and faculty might be most desirable in the educational program of a non-urban school. Such an office organization might have little merit in the university in a great metropolitan area where students and faculty alike are surrounded with construction and part-time employment opportunities.

I would certainly agree with Wright that Architectural History, and in fact all of the theoretical courses in architecture, should be taught more creatively. There is great room for imaginative exploration in this area.

The task before us is humbling when one considers the simple fact that the men entering in the collegiate schools of architecture this fall will probably still be practicing in the next century. The changes experienced in our own suggest the staggering developments to come tomorrow and the need for real education designed to enable future architectural practitioners to analyze and solve these building problems. We must be particularly wary lest we indulge in mere vocational education, or fashionable whims and excesses.

HARLAN E. McCLURE
Clemson College

•

Dear Editor: My thanks for the splendid article on "Architectural Education—A Prediction," by Ernest Wright.

I was glad to note the emphasis on three-dimensional work by students. Having worked in the Taliesin Fellowship, I am greatly in sympathy with this approach. We require two summers of practical experience in construction and/or in the office before graduation. Furthering the three-dimensional idea, we require all architectural students to have three shop courses in machine, tools, methods and materials. They execute their own designs in wood, metal, and plastics.

GEORGE M. BEAL
University of Kansas

•

Dear Editor: The peek at the future noted in Ernest Wright's article should be essentially correct; actually, it doesn't seem to be a bold prophecy, for today many schools have courses beyond engineering design in wood, steel, and concrete. The curriculum at our School includes a fifth year in "structural

(Continued on page 14)

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REINHOLD

(Continued from page 13)

planning" in which experimental and developmental structural schemes are designed and analyzed though not generally figured. Students construct models of these systems. Actually, the teaching of the postulates of structures should be furthered.

I agree that full scale models would be more beneficial but costs and space for construction of problems need to be resolved. For further understanding of these systems advanced mathematics courses would be required. Perhaps in the future still greater stress will be placed on

(Continued on page 236)

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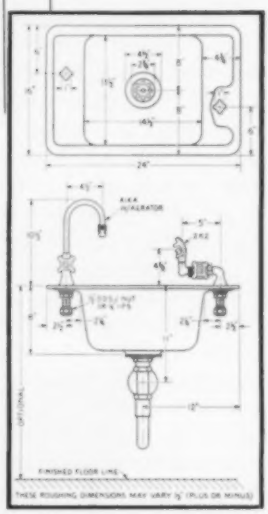

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historic "transition" zone

Dear Editor: I have especially enjoyed the June issue of P/A. You say in your P.S. editorial that one is impressed with the number of first-rate examples of residential design from which to choose, and "with the degree of both technical and esthetic advances." But I think one is also impressed by the immaturity of American designers in handling the important problem of providing zones, or "areas of transition," from "open sky to complete enclosure."

Someday it may be practical for a publication such as yours to present a series of historic structures—both in the West and in the East—which could help in the development of our architecture.

I take the liberty of enclosing an example of traditional Japanese design to illustrate. LESTER COLLINS
Washington, D.C.

various approaches

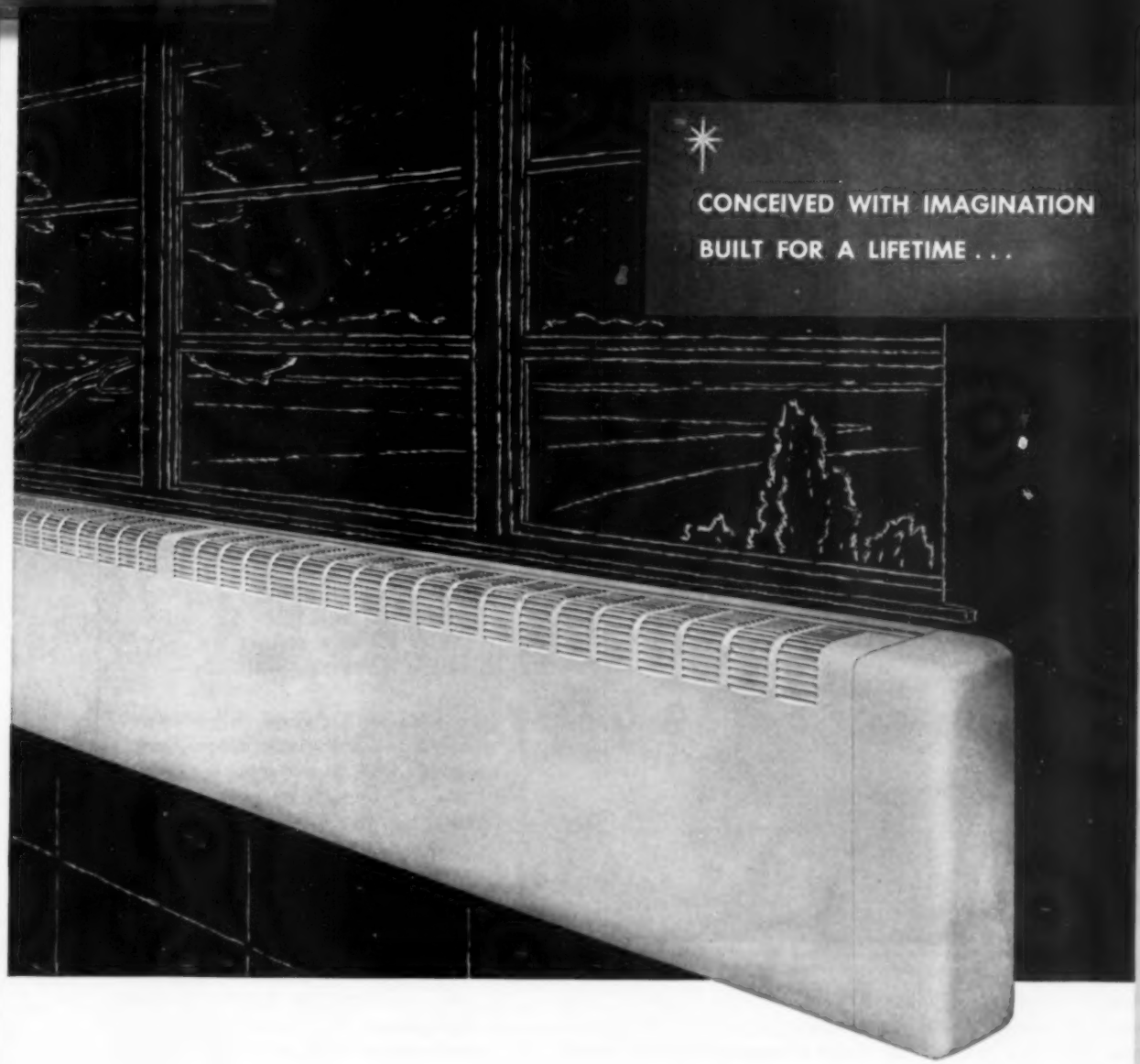
Dear Editor: Enjoyed your feature, "The New House-to-Site Transition," very much, making a wonderful choice of various kinds of approaches to the same goal.

Also, I do appreciate the velvet finish on the paper, which always makes for easier reading and distinctive presentation. I wish the whole magazine could be printed that way. H. H. WAECHTER
Creswell, Ore.

subject enjoyed

Dear Editor: I enjoyed very much your June 1956 P/A—especially the material and method of presenting the house-to-site article. In spite of

(Continued on page 16)



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(Continued from page 14)

all the advertising that seems necessary in our American magazines, I think P/A is doing a very dignified and informative job in presenting the architectural material.

K. E. RICHARDSON
Portland, Ore.

the complete system

Dear Editor: The review of "Unistrut Space-Frame System" *(April 1956 P/A)* makes several points on which we should like to comment. The reviewer points out that A. F. Möbius made the first statement on the minimum number of members for a three-dimensional truss in 1837 and criticizes the report for referring to the patented frame designed by Henry B. Littlefield in 1937 as "early." It was not the intention of the authors to slight the early workers in this field or to detract from their due credit. On the other hand, we were not attempting to compile a complete history of space-frame development. Our concern was primarily with the attempts to produce a complete, industrialized system which could be used for a wide variety of buildings instead of the design of individual frames for specific applications. We felt that any such attempts would involve patentable features and therefore had a search made of the patent records. This search revealed the patent granted to Littlefield. No earlier patents for such systems were discovered so, in this sense, his work was early.

In his last paragraph, the reviewer states that the Unistrut space frame is "deficient" of one member. If by this he means, as we must assume, that the structure does not have complete triangulation we must agree that he is correct. But when he refers to the "necessary diagonal" we must take exception to his statement by asking the question, "necessary for what?" It is certainly not necessary for stability under load because the frame has successfully carried both gravity and lateral loads of considerable magnitude. The member referred to can only be necessary to complete the triangulation; but with connections which furnish a considerable degree of rigidity against rotation, such triangulation is not necessary for stability. The addition of these diagonals would add to the strength of the frame, but this addition would be achieved only through the loss of other, and to our thinking, more desirable qualities. As now detailed, the connection is a simple, one-piece bolted fitting. Any attempt to add the diagonal members referred to would require a much more complex connection since two members would then lie in the same vertical plane at the joint. As the reviewer points out, a diagonal member was added in the upper plane to give extra sup-

(Continued on page 22)

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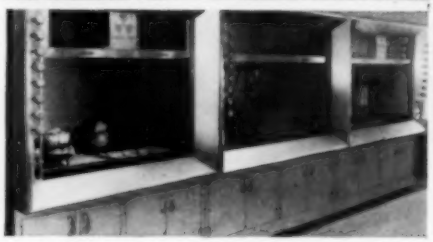

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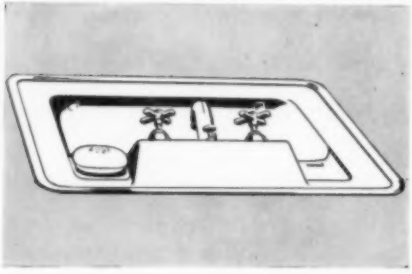

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Photo by Ben Schnall.

300 Park Avenue, New York. Architect: Emery Roth & Sons. Contractor: Uris Brothers. Lupton Aluminum Curtain-Wall, Type H. Fabricated and installed by Lupton. Width module is 4'5", center to center of mullions. Mullions are aluminum tube with expansion joints at alternate floors. As the New York code requires a back-up wall to sill height, non-insulated spandrels are used. These are opaque structural glass. Window ventilators open out.

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LUPTON

METAL WINDOWS AND CURTAIN-WALLS

(Continued from page 16)

port for the roof panels, but this member is only used for that purpose. It is not a part of the space frame and is not connected, but only laid in place. This member would be omitted (as has actually been done in part of the roof of our research laboratory) if the roof-deck panels were such that they did not require this additional support. And the roof panels themselves are not considered as adding rigidity to the frame, as suggested, since they have a small tolerance on all sides. To illustrate further, it might be mentioned that during erection of the research laboratory we built a tower for a one-ton hoist which consisted of one triangular space-frame truss set on end, and this proved very satisfactory under load without the diagonals referred to. To sum up, since one of our objectives was to produce a system which would be simple to manufacture by mass-production methods we felt that any gain in strength by adding these diagonals would be more than offset by a resulting loss in economy of manufacturing and handling.

There were also two minor errors in the review which should be corrected. On page 218, the review gives the depth of the frame as 2'-10⅝": the actual over-all depth of the steel frame is 3'-4". Also on page 218, in referring to the test on the frame with a column space of 28'-7" and an overhang on all sides of 12'-3" the maximum deflection under a 30-psf live load should have read 1/1370 of the column spacing: not 1/370 as reported in the review.

One other point made by the reviewer seems to require comment. He mentions that no attempt was made to compare costs of the frame with other types of construction with the same spans. Since this report dealt with the strength and rigidity of the frame, cost information was not included. Cost information compiled to date clearly indicates that the system will be competitive with more conventional systems of construction, but with the added values of flexibility in plan and in alteration.

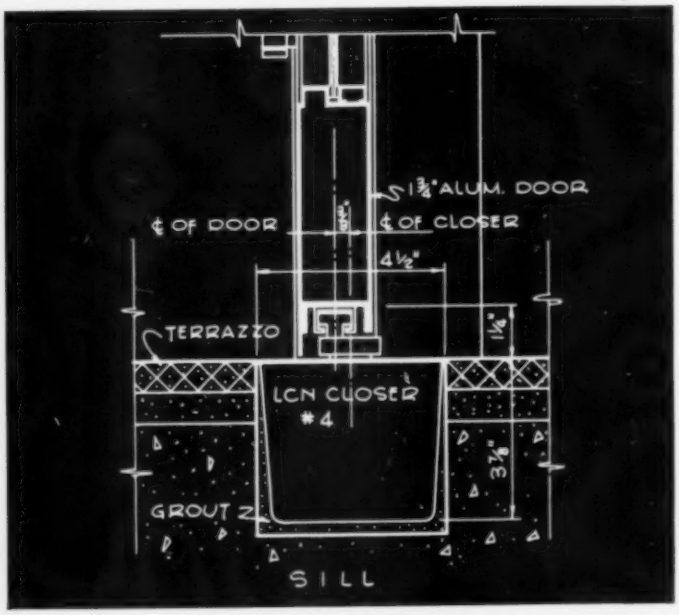
PAUL H. COY
Assistant Professor of Architecture
LEO M. LEGATSKI
Associate Professor of Civil Eng.
University of Michigan

•

Dear Editor: The comments from the Michigan Professors indicate the value of the points made in my review. The information which I found lacking in the original report they have now provided in their letter. Deviations from basic theory found necessary in practical work should always be explained.

The depth of the frame as I stated was intended to be measured to the centerlines of the two planes. The deflection fraction was apparently a typographical error.

H. SEYMOUR HOWARD, JR.
Assistant Professor
School of Architecture
Pratt Institute



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THE MARK OF SUCCESS

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AN ACTUAL SAMPLE SHOWING COLORS AND TEXTURE OF THE NEW

LOXIT LOXITEX TACKBOARDS

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Celadon T-202X
Cinnabar T-203X
Sandalwood T-204X
Sand T-205X
Willow T-206X
LOXIT LOXITEX TACKBOARDS
in Six Attractive Colors
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LOXIT SYSTEMS, INC. • 1217 W. WASHINGTON BLVD. • CHICAGO 7, ILL.

You'll receive actual samples of the six new LOXITEX fadeproof tackboard colors and complete specifications.

Notice the advantages of LOXITEX TACKBOARDS

1. Fabricated from genuine VICRTEX electrically-fused vinyl-coated fabric laminated under high pressure to a treated pulpboard backing.
2. Stay pliable and spongy under long, hard usage.
3. Will not crack, chip, peel or scratch.
4. Easily cleaned with a damp cloth.
5. Can be installed with or without trim.
6. Six fadeproof colors; Limed White, Cinnabar Coral, Sand Tan, Celadon Blue, Sandalwood Brown and Willow Green at no extra cost.

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MULTIPLE HEATING UNITS
multiply school building and modernization dollars

MOST ECONOMICAL IN OVER NINETY SCHOOLS is the record of this thoroughly modern Janitrol forced warm air heating system designed by Architects Kistner, Wright & Wright, Los Angeles. Each room has a compact, concealed, Janitrol gas-fired winter conditioner in a ventilated closet. Thus each room enjoys individual temperature control, as required by student activities. Two warm air outlets are placed above the woodwork. Air return is below access door. An outside air inlet supplies combustion air.

Specifying Janitrol gas-fired warm air individual room units in place of a central system can mean savings up to 50% on original equipment and installation. *More* dollars to spend for other phases of construction or modernization, with assurance that the children and teachers will get top quality heating in classrooms, gymnasium, cafeteria.

The versatility of Janitrol gas-fired units makes them easily adaptable for a wide variety of installations. Units operate only as needed—no wasted heat in unoccupied areas. With a Janitrol "multiple unit" installation, you can provide *zoned comfort* without extra cost . . . insure lifetime heating economy.

All requirements are met by Janitrol's complete line. Select from models for closet or alcove, for suspension from ceiling, for vertical or horizontal discharge in a wide range of heating capacities. Every Janitrol gas-fired heating unit features the famous Janitrol Multi-Thermex heat exchanger, with a record of less than ¼ of 1% failures for any cause in over two million exchangers. Your reputation is in good hands when you trust it to Janitrol quality and economy.

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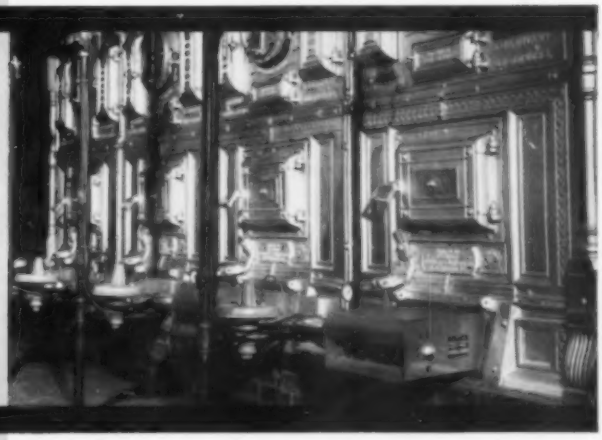
Write today for complete A.I.A. files on heating with gas in big buildings of every type, and for Janitrol specifications service. There's no obligation.

HERE'S A COMPACT, LOW COST INSTALLATION. The Janitrol Winter Conditioner is on a plenum alongside an outside wall and backed up to a partition wall. Warm air is discharged from the top outlet grille across the outside wall and windows. Fresh air and recirculation air enters through the floor plenum. If desired, ducts can be extended through the partition into the adjoining classroom, and both rooms heated by one unit. Installation in Tilley Elementary School, Orange, Texas. Architects, Stone & Pitts, Beaumont.

"WE SAVED ENOUGH TO BUILD WITHIN OUR BUDGET BY USING JANITROL GAS UNIT HEATERS INSTEAD OF A CENTRAL SYSTEM", states Mr. James Dawson, Sup't. of Schools, Crawford County, Bourbon, Mo. Each heater is thermostatically controlled. The architectural firm of Barnes and Snipes writes, "The reason for using Janitrol equipment included economy of installation and flexibility of handling the heating problem." Janitrol Gas Unit Heaters are designed for dual fuel operation, save floor space, reduce maintenance costs.

A TYPE OF INSTALLATION FAVORED BY MANY ARCHITECTS incorporates a Janitrol Horizontal Winter Conditioner suspended from the ceiling in each room. Warm air is directed parallel to outside walls and across glass areas. A built-in centrifugal blower provides quiet, even air circulation. This unit is also approved for use with a duct system, and is available in models for 65,000 to 150,000 Btu/hr. inputs. Installation illustrated is at Rosen Heights School, Fort Worth, Texas. Architect is Stanley Brown, Dallas.

LOUVERED CEILING PANELS of the venetian blind type serve a three-fold need at West Columbia School, near Houston, Texas. They conceal the Janitrol blower-type unit heater. They effectively diffuse the heat, preventing it from blasting on the occupants below. They diffuse and distribute light from the sawtooth roof windows. This type of application is recommended for areas where "cold floor" problems are not encountered. Architect: Donald Barthelane, Houston, Texas. Contractor: The Warren Co., Houston.



MANY SCHOOL-HOUSE TYPE FURNACES HAVE BEEN CONVERTED FROM COAL TO CLEAN, EFFICIENT GAS by installation of Janitrol SC-05 large capacity burners, which are designed for input capacities up to 750,000 Btu/hr. each. The Janitrol SC-05 Conversion Burner fits furnaces or boilers with an ashpit opening not less than 15⅛″ wide by 7-5/32″ high and in which the depth of the burner throat does not exceed 4″. Shown here: Installation at Bridgeport High School, Bridgeport, W. Va.

Janitrol

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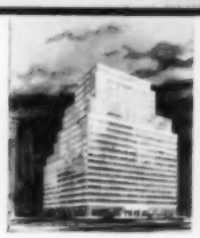

Colgate-Palmolive Building, 300 Park Avenue, New York Architect: Emery Roth &, Sons Owner-Builder: Uris Brothers Doors and Door Frames—Aetnawall Partitions

Lever House, 390 Park Avenue, New York Architect: Skidmore, Owings & Merrill • General Contractor: George A. Fuller Co. • Doors and Door Frames

430 Park Avenue, New York Architect: Emery Roth & Sons Owner-Builder: 430 Park Avenue Corporation • General Contractor: Freeman & Gerla Doors and Door Frames—Elevator Enclosures—Aetnawall Partitions

99 Park Avenue, New York Architects: Emery Roth & Sons. Owner-Builder: Tishman Construction & Realty Co. • General Contractor: Tishman Construction and Realty Co. Aetnawall Partitions

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AETNA ON PARK AVENUE

Who Was Peter Naylor?

On Page 37 there begins a fascinating account of a genius by the name of Peter Naylor. Readers who delve into this story of the beginnings of the metal lath industry and growth of a wall and ceiling system which has made one of the most significant contributions to the use of plaster as a superior interior finish will want to read on to the very end.

This illustrated history of metal lath ties an important system to historic milestones of architecture in a way that makes its ultimate perfection, now come to pass, one of the reasons why the design profession has been able to reach and surpass itself in these days of great achievement.

This sixteen-page story, edited by Don Graf, is "recommended reading".

Process Development Section showing Installation of Kewaunee Laboratory Equipment

Kewaunee Laboratory Equipment Selected for G. M. Technical Center

Contributing to the vast research and development program at the new General Motors Technical Center are custom planned installations of Kewaunee Laboratory Equipment in four separate buildings: Isotope Laboratory; Process Development; Service; and Styling. Kewaunee also installed custom planned equipment in Fisher Body and Chevrolet Central Engineering.

As with so many laboratories, General Motors recognizes the value of Kewaunee's half century of experience in designing, engineering and building fine laboratory equipment. Equipment planned for maximum safety, efficiency and convenience of personnel. Equipment permitting greatest flexibility of arrangement, for both present and future needs. Equipment that meets the most exacting laboratory requirements.

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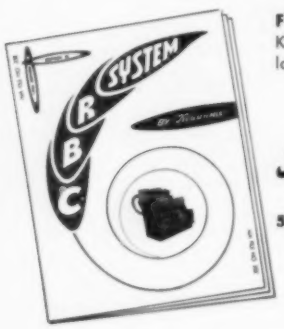

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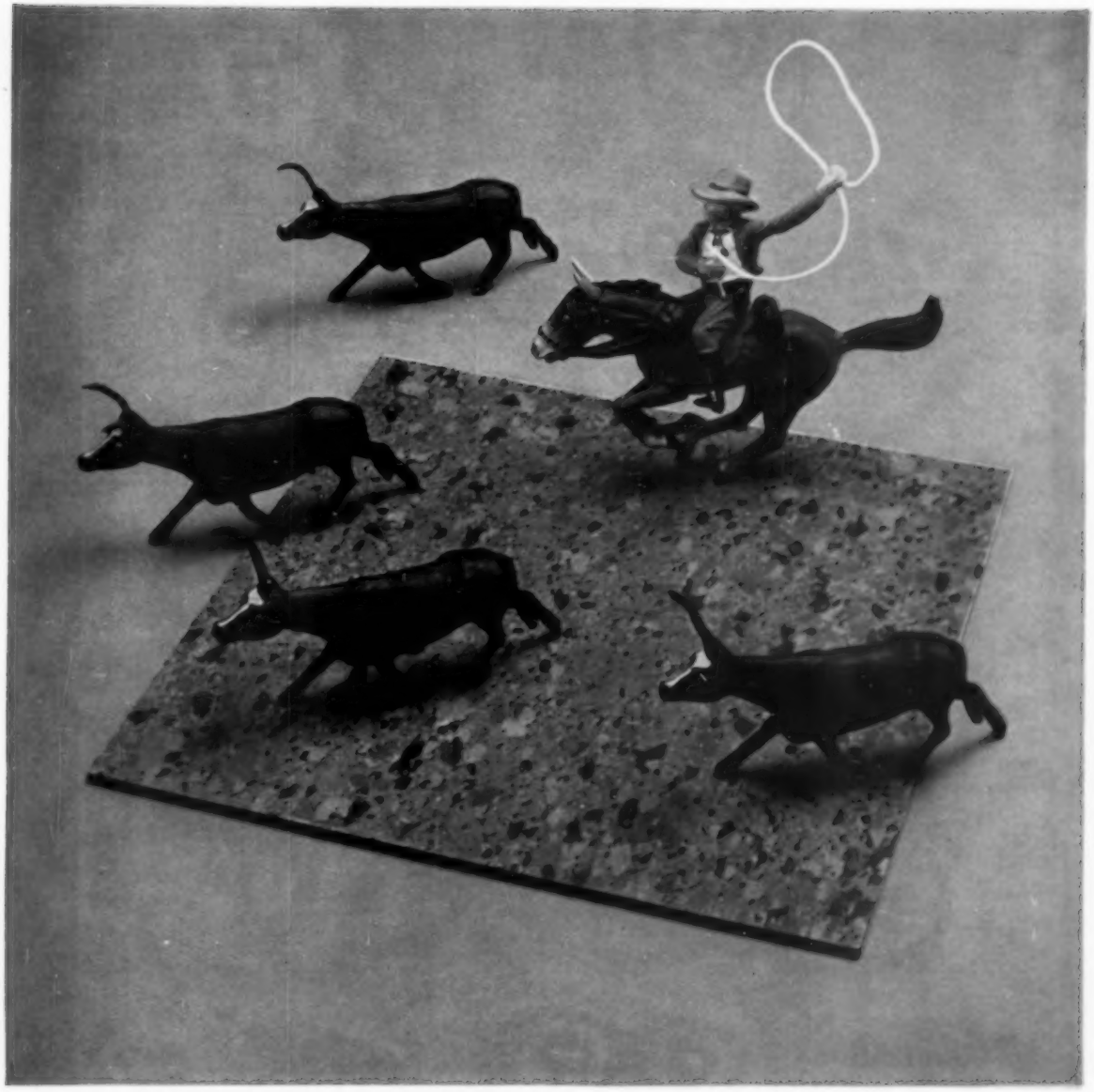

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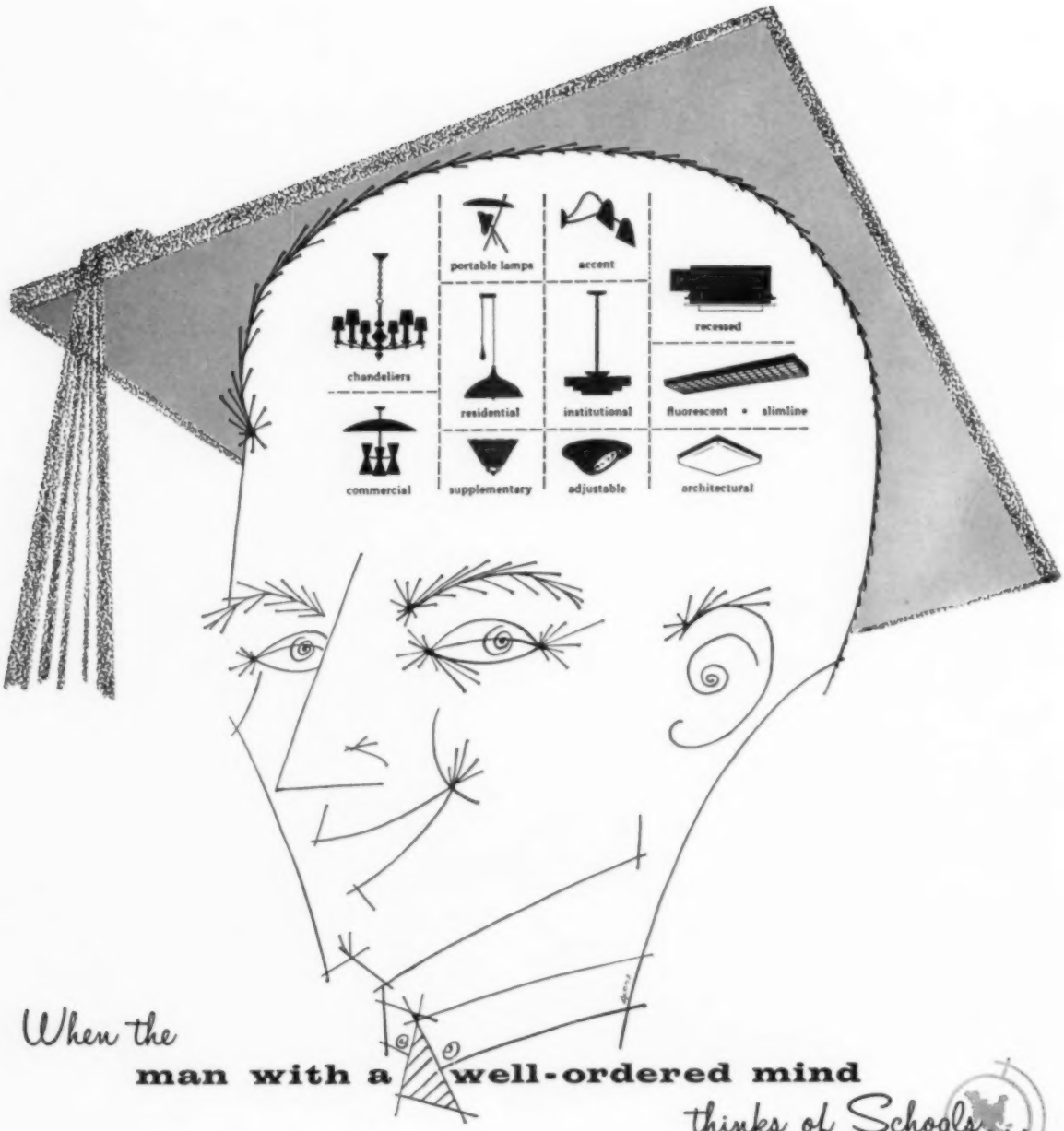

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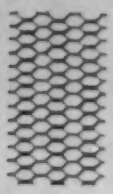
AIA FILE 20-B-1

Peter Naylor

1839

MAN OF VISION

AIA FILE 20-B-1



Metal Lath News

UNITED STATES PATENT OFFICE.

PETER NAYLOR, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MODE OF PROTECTING PLASTERED WALLS AND CEILINGS FROM FIRE.

Specification forming part of Letters Patent No. **1,087**, dated February 22, 1839.

To all whom it may concern:

Be it known that I, PETER NAYLOR, of the city of New York, in the State of New York, have invented a new and improved mode of protecting the walls and ceilings of such apartments as are usually finished with lath and plaster against the effects of fire by substituting perforated plates of metal for the lath of wood usually employed; and I do hereby declare that the following is a full and exact description thereof.

I take thin sheets of metal, preferring, so far as my experience has gone, tin-plate as prepared for the purpose of manufacturing tinware, as I have reason to believe that the tinning protects the iron completely from the action of the lime used and from oxidation generally. I do not intend, however, to confine myself in this particular, but to use any kind of sheet metal which I may find adapted to my purpose. When tin-plate is used the distance of the joist or of the timbers generally to which it is to be attached must be within the limits of the length of such plates; but when sheet-iron or other metal is employed the distance may be greater. I take the sheet metal which is to be used and I punch numerous holes through it, in the manner of a grater, using either a round or chisel-edged punch, as may be preferred. The diameter of these holes may be from an eighth to a quarter of an inch. When the plates have been so punched I nail them onto the joist, scantling, or studs with the rough or burred edges of the perforations outward. For greater security I take strips of hoop-iron, which I nail on the timbers in strips before nailing the sheet metal, and when this is done it would be difficult to heat the metal through its two thicknesses sufficiently to set fire to the timber, even without the protecting influence of the plaster. The sheets of metal may be seamed together at their edges before nailing them on. When the sheet metal has been properly secured to the timbers I proceed to plaster the walls in the usual manner, omitting, however, the first rough coat which is necessary when laths of wood are employed. The plaster will pass through the numerous perforations in the sheet metal, and will be as securely keyed and retained in place as when done in the ordinary way. It has been found, also, by experiments carefully performed that the plaster will not flake off by a long continued heat so readily as it does from wooden laths, which warp and twist, and thereby aid in loosening the plaster.

What I claim as my invention, and desire to secure by Letters Patent, is—

The employment of perforated sheet metal as a substitute for laths on walls and ceilings to be plastered, using and applying the same substantially in the manner herein fully set forth.

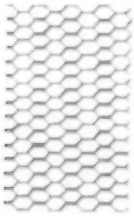
PETER NAYLOR.

Witnesses:
A. BOKEE,
K. S. VAN VOORHIS.

PATENT ON METAL LATH GRANTED TO PETER NAYLOR IN 1839

MAN OF VISION

Chronology of an Improvement in Building . . .



METAL LATH

1839 Few men have made a more significant contribution to the science of building than Peter Naylor. On February 22, 1839, he was granted Letters Patent No. 1,087 by the United States Patent Office for his claim to an invention as an *improvement in the mode of providing plastered walls and ceilings to resist fire.* By perforating metal sheets he had found by experiment that . . . *the plaster would pass through the numerous perforations . . . be securely keyed and retained in place . . . the plaster would not flake off by a long continued heat . . .*

This is still the basic principle that enables metal lath to maintain its never-challenged position as the best plaster base. Well over a century later, Peter Naylor could be proud to have aided in preventing death and damage from fire—as well as for his contribution to the greater beauty, economy, and durability of our present-day buildings.

1880 Peter Naylor's perforated sheets of metal were the forerunners of what we know as sheet lath today but without the features of the modern product. By the year 1880, the demand for sheet metal lath had grown because of its obviously desirable advantages. It was used in the construction of the Boston Post Office in this decade. Almost 50 years later, this building was demolished. Inspection of the sheet lath and plaster at the time of demolition demonstrated positively the lasting affinity of these two materials.

1884 In the year 1884, John F. Golding obtained a patent for a process of cutting parallel staggered slits in sheets of metal which were then pulled or stretched to both deform the planes of the metal strands that resulted and, at the same time, to produce diamond-shaped openings. The product was called "slashed metallic screening" and was not intended as a plaster base at all—it was invented as a material for fencing! Some 22 years earlier, Thomas Long of Middlesex County in England had secured a British patent on a similar process of expanding metal sheets to form a lace-like pattern of openings. Known as the guillotine method, this process was the predecessor of the one used today to produce millions of square yards of expanded metal lath annually to satisfy the extremely exacting demands of the architects who design our modern buildings.

1888 The Library of Congress, designed by Architects Smithmeyer and Fels with Architect Edward Pearce Casey later associated on the project, is an example of the lasting combination of metal lath and plaster. Murals, ornamental sculptured plaster, and plane wall surfaces are testimony after more than half a century that the architects were wise in the selection of metal lath as a plaster base for durability.

1892 The Columbian Exposition in Chicago, an important event in itself, was of exceptional significance to the metal lath industry. It was there that Golding's "slashed metallic screening" was converted into a base for plasters in the theatrical buildings of the so-called "White City" which were designed by such immortals as Architects Sullivan, Burnham, Root, and many others.

1898 To Frank Pitkin goes the credit for development of a rotary production method for diamond mesh metal lath which resulted in greater manufacturing economies.

1930 The Spanish-American War, the "panic" of 1907, World War I, and the business adjustments of the 1920's marked a period of feast and famine in building activity. During these years there were developments in metal lath manufacture as covered by patents which were secured by Fordyce and Duncan in 1900, by Curtis in 1905, and by Pearce who in 1930 obtained a patent on his inventions covering the small diamond mesh.

1956 To the improved methods of producing metal lath which have been developed over the years, there is now added a new on-the-job factor—machine application of plaster over the lath. The utilization of a machine or "pump" for applying plaster to metal lath is now an established reality. It promises advantages in the use of this versatile design material that would please Peter Naylor.

Metal Lath News

Don Graf, Editorial Consultant

Metal Lath and Plaster

satisfies all four requirements . . .

1

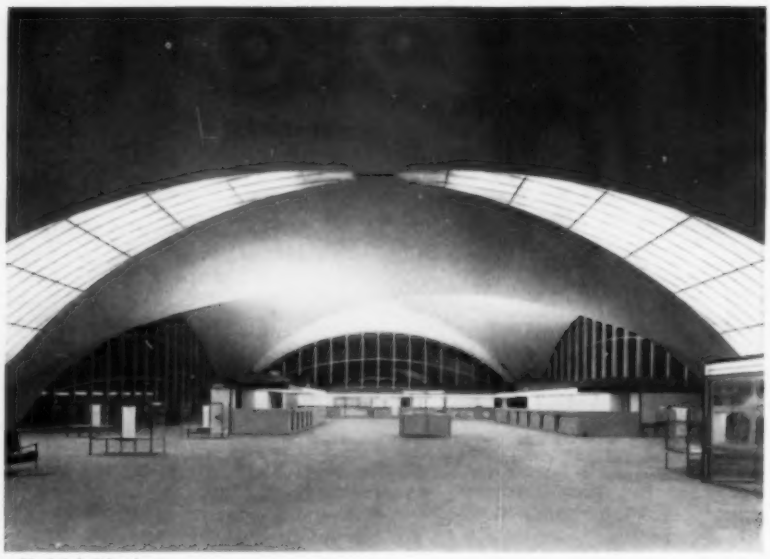
FIRE SAFETY

In this hotel, constructed with wood-frame interior and masonry exterior walls, fire spread rapidly throughout the building because of unenclosed stairways. The metal lath and plaster protecting the wood framing thus was subjected to a severe test—and proved conclusively again the fire safety of this combination of materials. A member of the fire department publicly stated that metal lath and plaster enabled the firemen to save the building from destruction.

2

DESIGN VERSATILITY

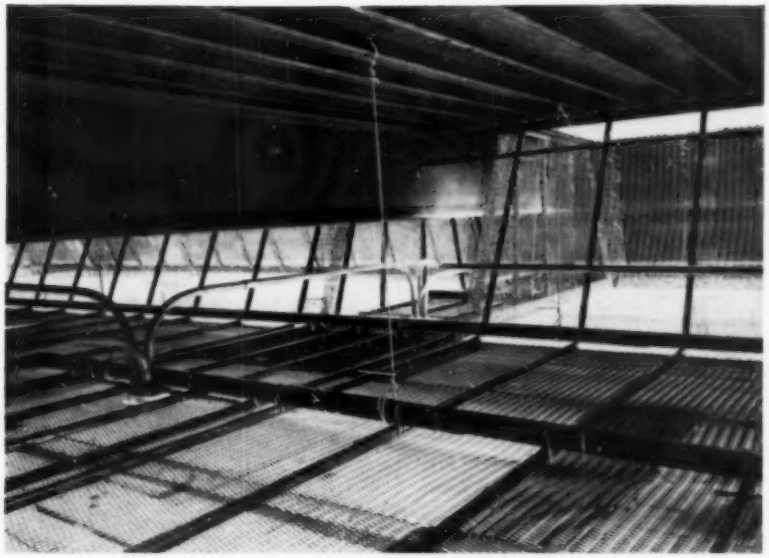
The groined vault-type ceiling in the new airport in St. Louis, Missouri, illustrates the design versatility of metal lath and plaster. Helmuth, Yamasaki and Leinweber, Architects and Engineers; H. Niehaus Plastering Company, Lathing and Plastering.



—Hedrich-Blessing

3
DURABILITY

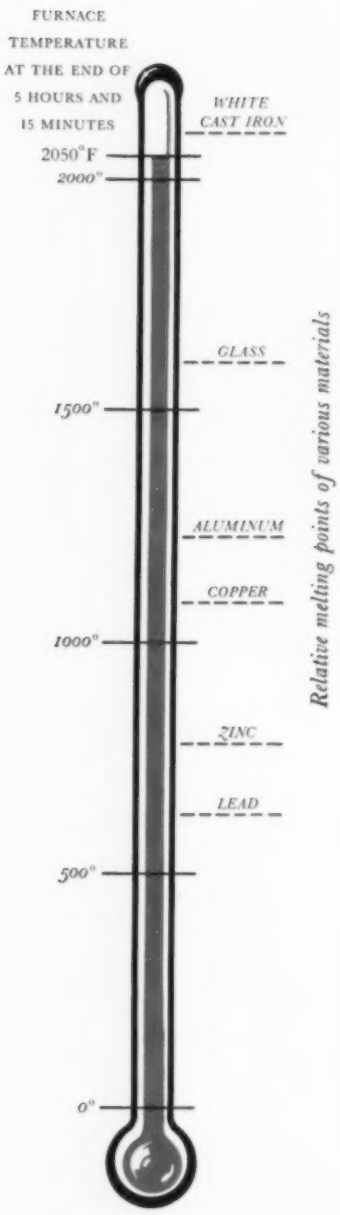
In the Library of Congress, Washington, D. C., built prior to the twentieth century, metal lath and plaster construction has proved its durability by well over 50 years of service. Smithmeyer and Fels were the Architects, with Edward Pearce Casey later becoming an associate.



4
ECONOMY

This suspended ceiling of metal lath, after application of gypsum-lightweight aggregate plaster, will serve as membrane fireproofing for the structural steel members in the Cleveland Institute of Art, Cleveland, Ohio. There was a significant initial economy due to the reduced dead loads resulting from use of these fireproofing materials. Garfield, Harris, Robinson & Schafer, Architects; John Smallwood, Lathing and Plastering Contractor.

FIRE SAFETY

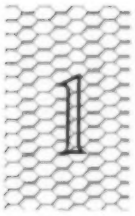


METAL LATH AND PLASTER PARTITION INTACT AFTER SEVERE FIRE TEST

Assembly was tested in furnace for a period of 5 hours and 15 minutes

The ability of a 2″ solid metal lath and gypsum-sanded plaster partition to resist destruction by fire has been proved. Subjected to intense heat in a standard test furnace in a nationally known laboratory for a period of 5 hours and 15 minutes, this partition successfully prevented the passage of fire. The partition did not approach collapse despite a maximum temperature of over 2000° F. in the furnace. There was no spalling of plaster. This is fire safety!

Experience and Tests establish Metal Lath and Plaster . . .



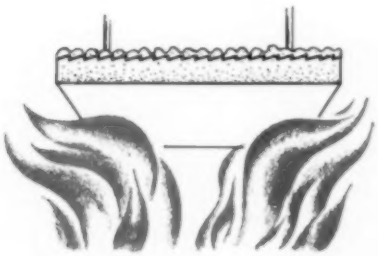
FIRE SAFETY

Metal lath and plaster construction has an established record over many years in stopping or delaying the spread of fire and the consequent saving of life and property. Both in the laboratory and in the field the unique resistance of this combination of low-cost building materials to the ravages of fire has been proved countless times.

When plaster is applied to metal lath, the plasticity of the mortar under the pressure of the mechanic's trowel, or the force of the plastering machine or pump, results in the formation of approximately 1000 keys for every square foot. These keys or "fingers" of plaster formed on the back of the metal lath tenaciously grip the strands of steel. The plaster and metal lath are virtually inseparable.

In laboratory tests far more severe than the crisis of an actual fire, two-inch-thick solid partitions of metal lath and gypsum-sanded plaster were exposed to the intense heat of a test furnace for *five hours or more!* The temperature of the furnace during the tests reached over 2000° F. After such demonstrations of fire resistance showing no imminence of collapse, the architect can specify metal lath and plaster with assurance of maximum fire safety.

Membrane fireproofing, consisting of metal lath and plaster, is the newest development for the fire protection of the structural steel frames of buildings. Light in weight and economical in cost, this modern method of fireproofing rapidly is becoming the choice of more and more architects and engineers in designing structures which will be safe from destruction by fire.



Floor constructions with metal lath and plaster ceilings on the underside have earned fire-resistance ratings in excess of four hours. Flames during these tests were stopped by the plaster which gripped the metal lath by means of over 1000 keys or "fingers" per square foot. This is fire safety!

Metal Lath News

DESIGN VERSATILITY

—*Hedrich-Blessing*

Design Versatility—The office of American Stove Company, St. Louis, Missouri, is an outstanding example of the manner in which metal lath and plaster can be adapted to ornamental requirements. Harris Armstrong, Architect; ceiling design by Isamu Nourchi; Robert Campbell Plastering Company, Lathing and Plastering Contractor.

Design Versatility — Whether the surface problem is a simple plane or a complicated contour, metal lath and plaster is the best solution. This suspended ceiling with concealed lighting in the Westminster Presbyterian Church, Detroit, Michigan, shows design versatility. Harold H. Fisher & Associates, Architect; Service Art Plastering Company, Lathing and Plastering.

Metal Lath and Plaster assures ultimate in . . .

DESIGN VERSATILITY

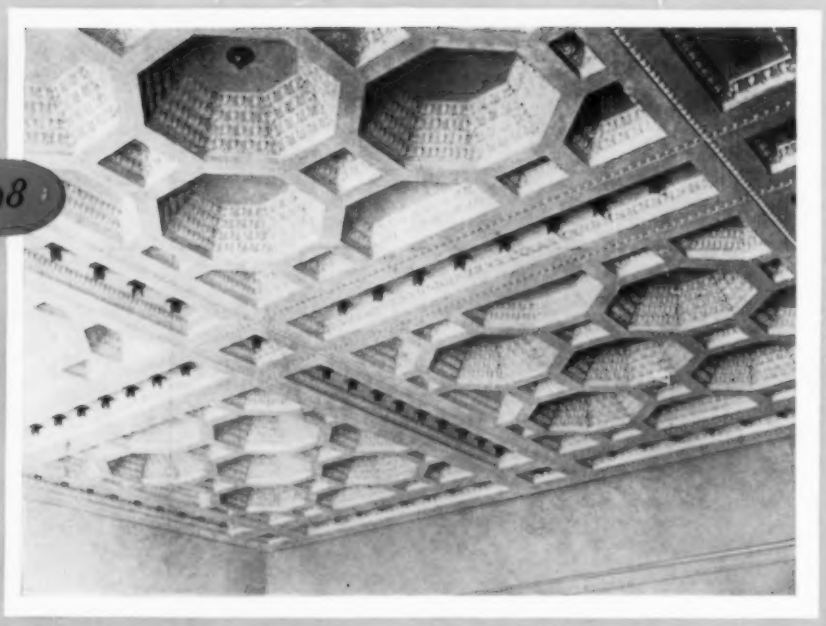
Generally the word "design" connotes how something *looks*. To the architect, "design" embraces strength and utility as well as beauty. No combination of wall and ceiling materials has greater versatility as a composite design medium than metal lath and the various available plasters.

Metal lath and plaster construction is adaptable to varied geometrical forms, offers a selection of surface textures, provides fire resistance, and enables acoustical treatment. Indeed, it is a fluid medium of design which permits the architect to meet readily the varied building requirements.

With metal lath and plaster, architect Harris Armstrong achieved, within budget limitations, the elaborate ceiling effect he desired for the lobby of the American Stove Company office building in St. Louis, Missouri. A cast ceiling would have been prohibitive in cost.

Architects may be certain that metal lathing and plastering contractors will respond promptly to inquiries on problems of imaginative design which can be solved by means of the versatile combination of metal lath, metal accessories, and various types of plasters.

DURABILITY



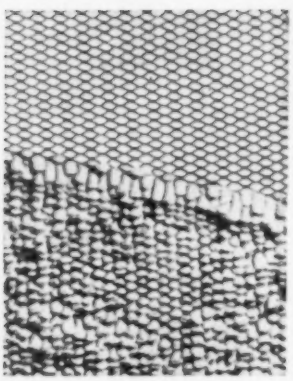
1898

Durability – The expanded metal lath industry began to thrive in the 1890's. Metal lath was specified for many important structures during that period including the Philadelphia City Hall. Designed by John McArthur, Architect, with John Rice, William Struthers and Elijah Jones as Associate Architects, this building was completed about 1894, ground having been broken in 1871.

This picture of an ornamental ceiling originally was taken in the coroner's office, Philadelphia City Hall. It appeared in the 1898 edition of the magazine "The Doings of Expanded Metal."

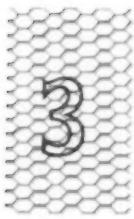
Here is the same ceiling today, now a courtroom. Its unfaded beauty attests to the durability of metal lath and plaster construction.

1956



Durability – These are the keys of plaster which so tenaciously grip the metal lath. With approximately 1000 of these "fingers" per square foot, a plaster slab reinforced with metal lath offers the utmost value in years of service and lasting newness.

Time attests to Metal Lath and Plaster . . .

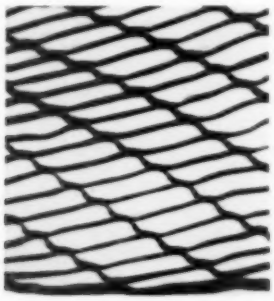


3 DURABILITY

There is a phrase "profit by experience." The combination of metal lath and plaster has been improved, developed, and made available in more and better ways through the conclusive test of long experience. Perhaps it is a paradox that such time-tested materials as metal lath and plaster combine to express the most forward and newest ideas of architectural design.

Destructive disasters of floods, earthquakes, fires, hurricanes . . . have left in their wake the proof that metal lath and plaster construction not only resists damage to itself, but, at the same time, serves to protect human life and property.

Whether from expected wear and tear, normal use, or from some unexpected demand by the elements, the profit of experience will dictate this combination of materials for durability. There can be no question of doubt on its past performance.



A piece of metal lath which was installed in the Masonic Temple, Detroit, Michigan, in 1904-05.

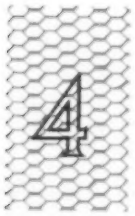
ECONOMY

Economy—This solid partition of metal lath and plaster, only 2″ thick, is low in installation cost and makes available many added square feet of useful floor space.

—*Hedrich-Blessing*

Economy—Machine or "pump" application of plaster is an important step toward reduced costs of buildings which must satisfy exacting demands of fire safety, durability, and design versatility.

Integral feature of Metal Lath and Plaster is enduring . . .



4 ECONOMY

The question of true economy has several parts . . . original cost . . . cost per-year-of-performance . . . lowest total cost in dollars for fire safety, pride of appearance, ease of redecorating, and minimum maintenance.

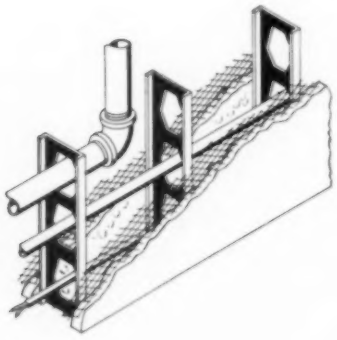
The many ways in which metal lath and plaster has been combined to perform so many functions in building construction has resulted in its universal acceptance as a mark of good judgment in the choice of building materials.

Two-inch metal lath and plaster solid partitions add surprisingly to the usable floor area, and, usually, at less initial cost than other types of partitions. The reduction in dead load as compared to other types of partitions results in savings in the cost of structural members.

Hollow partitions, readily accommodating mechanical pipes or ducts, are extremely light in weight and are exceptionally adaptable to job conditions when the actual installation suddenly is changed by some new or added requirement.

Completely complementing the several types and weights of metal lath is a wide variety of accessories. Metal base, casing bead, picture mold, corner bead, prefabricated studs, channels, cornerite, base screed . . . all are installed by a single skilled trade. The subcontractor for metal lathing and plastering will translate the architect's drawings into the three dimensions of reality with exactness. Here, too, is economy!

The fire protection of columns, beams, girders, and other structural elements with metal lath and plaster membrane fireproofing is a thoroughly tested, modern development. It saves cost and reduces weight, thereby saving dollars. There are countless numbers of existing structures which confirm the true economy of membrane fireproofing.



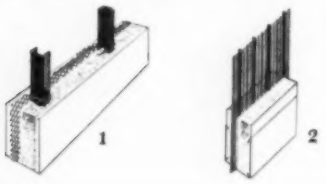
ECONOMY—Hollow partitions constructed of prefabricated metal studs with metal lath and plaster, offer a definite economy in installation of either horizontal or vertical mechanical lines. The convenience and ease with which the heating, plumbing and electrical contractors can install their work will be reflected in their bids.

Metal Lath Construction Guide

Selection of proper materials for specific conditions and purposes for a building is often as important as the building design itself. Some of the fundamental points usually considered by designers when types and methods of metal lath construction are determined are noted below.

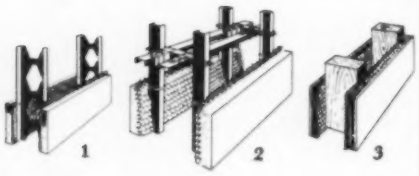
PARTITIONS

Advantages



SOLID PARTITIONS
(1) CHANNEL STUDS
(2) STUDLESS

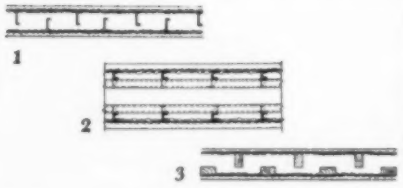
- Low initial cost
- Effective fire protection
- Minimum partition area required
- Impact resistant
- Good sound transmission loss
- Adaptability



HOLLOW PARTITIONS
(1) PREFABRICATED STUDS*
(2) CHANNEL STUDS*
(3) WOOD STUDS

* *nonload-bearing*

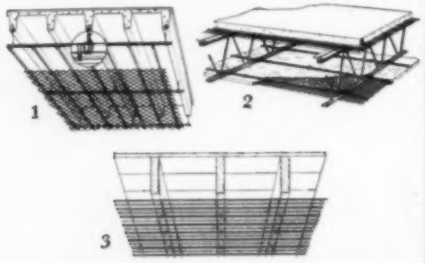
- In all metal construction, service lines can run horizontally or vertically
- Impact resistant
- Good sound transmission loss
- Effective fire protection
- Lightweight, strong and resilient
- Adaptability



DOUBLE PARTITIONS
nonload-bearing
(1) STAGGERED PREFABRICATED STUDS
(2) CHANNEL STUDS
(3) STAGGERED WOOD STUDS

- Excellent for sound isolation and reduction of sound transmission
- Flexible partition thickness
- Varied ceiling heights
- Effective fire protection

CEILINGS



(1) SUSPENDED
(2) FURRED
(3) CONTACT

All may be supported from steel, concrete or wood

- Effective fire protection
- Good sound transmission loss
- Acoustical treatment
- Flexible and versatile construction
- Concealment of utilities
- Architectural treatment
- Thermal insulating

VERTICAL FURRING

WALL FURRING

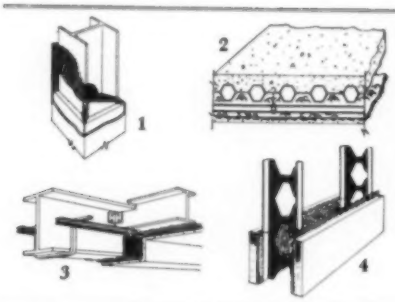
ENCLOSURES FOR SHAFTS, STAIRWELLS, COLUMNS, DUCTS, UTILITY ROOMS, AND OTHER LOCATIONS

- Effective fire protection
- Provides concealment
- Sanitary and finished appearance
- Sound insulation
- Thermal insulating*
- Vapor barrier*
- Wall independent of structure*

* *Applicable primarily to Wall Furring*

FIREPROOFING

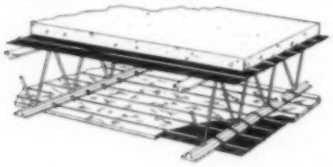
Advantages



MEMBRANE FIREPROOFING
(1) COLUMNS
(2) FLOORS, CEILINGS AND ROOFS
(3) BEAMS, GIRDERS AND TRUSSES
(4) WALLS AND PARTITIONS

Maximum fire protection
Economical
Lightweight
Rapid installation
Minimum thickness
Fire tested
Metal lath holds plaster in place continuously
Finish coat frequently unnecessary

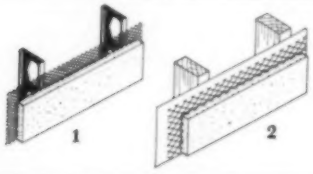
CENTERING



Type of supporting member
STEEL JOISTS
JUNIOR BEAMS
CONCRETE JOISTS

Eliminates need for expensive forms
Reinforces concrete
Minimum deflection with wet concrete
No stretching required, will not rotate joists
Fulfills fire-resistive requirements

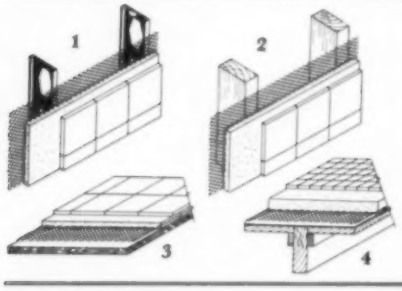
STUCCO



Type of supporting member
(1) STEEL STUDS
(2) WOOD STUDS

Monolithic surface
Low maintenance costs
Durability
Architecturally versatile
Weather resistant
Effective fire protection

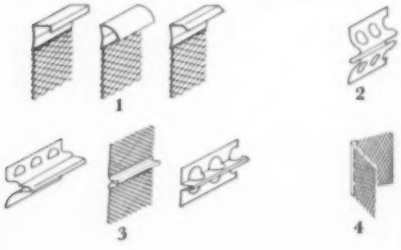
CERAMIC TILE



Type of supporting member
(1) STEEL STUDS
(2) WOOD STUDS
(3) WOOD COUNTER TOPS
(4) WOOD FLOORS

Supports mortar setting bed in place with positive mechanical bond
Steel reinforcement of mortar
Easily formed to suit contours
Easily cut for installation of miscellaneous fixtures

ACCESSORIES



(1) CASING BEAD
(2) CONCEALED PICTURE MOLD
(3) BASE SCREED
(4) CORNER BEAD

Less expensive than conventional trim
Hold plaster to a true line assuring full thickness
Protect plaster from damage
Flush with plaster surface
Invisible when decorated

Technical Bulletins Available

1

1 Types of Metal Lath and Their Uses

2

2 Studless Metal Lath and Plaster 2-Inch Solid Partition

3

3 Metal Lath Membrane Fireproofing for Steel Buildings

4

4 Reinforcing Plaster with Expanded Metal Lath

5

5 Metal Lath and Plaster Solid Partitions with Channel Studs

6

6 Metal Lath Centering

7

7 Metal Stud Nonbearing Hollow Partitions

8

8 Fire-Resistive Ratings

9

9 Reinforced Portland Cement Stucco

10

10 Casing Beads, Base Screed, Concealed Picture Mold

11

11 Sound-Insulating Partitions and Floors

12

12 Suspended Metal Lath and Plaster Ceilings

13

13 Sound-Insulating Double Partitions

14

14 Vertical Furring

15

15 Hollow Partitions with Channel Studs

16

16 Furred Metal Lath Ceilings

17

17 Contact Metal Lath Ceilings

18

18 Metal Lath Attached Directly to Wood Supports

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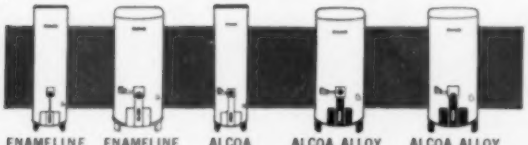

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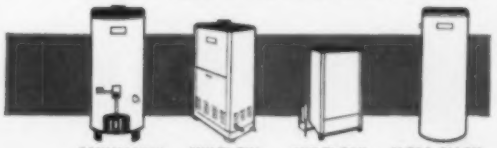

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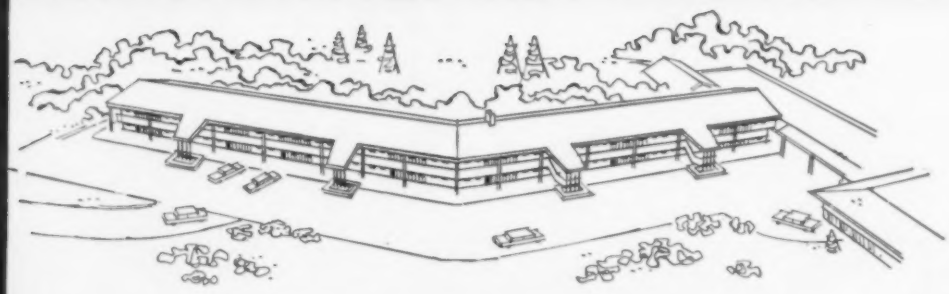
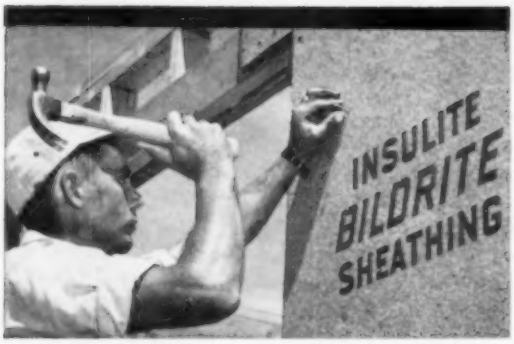
Bildrite cuts costs



Architects for Dartmoor Motor Inn were Theodore H. Irion, A.I.A. and Leonard H. Reinke, A.I.A., of Oshkosh, Wisconsin.

Eye pleasing, harmonious and highly functional, the Dartmoor building is of shallow V design, belying its total length of 333 feet. Balcony and overhanging roof provide covered walkways at both levels. Four massive buttressed stairways allow guests to park close to all second-floor rooms.

on luxury motel



High structural strength and the excellent insulation value of Bildrite Sheathing are key points in sound engineering. Also, Bildrite cuts easily, saves saw blades, goes up fast, cuts waste almost to zero. It's the finest sheathing money can buy.

In Wisconsin's beautiful vacationland, the luckier travelers are those who know about Dartmoor Motor Inn, at Fond du Lac.

Here, owner J. Harold Bumby has invested $300,000 to provide the utmost in comfort and luxury. Dartmoor has 32 units, with 8 equipped for housekeeping. There is easy access to rooms on both levels; telephone, TV and air conditioning in every unit.

On this job, as on most commercial buildings, good planning required speedy, economical construction; maximum frame strength; and highly efficient insulation. Accordingly, Dartmoor was built with 10,000 sq. ft. of Insulite's Bildrite Sheathing. The builder achieved important cost savings, and all performance factors required by the architects were fully met or exceeded.

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New laboratory developments give you a

WIDER CHOICE OF RESILIENT FLOORS OVER CONCRETE in contact with the ground.

Recent product developments and improvements and the formulation of new adhesives have greatly broadened the selection of resilient floors that may be specified for use over grade-level concrete subfloors. For such subfloors, there is now almost the same freedom of choice of resilient floors as for suspended subfloors. For many years, asphalt tile was the only type of resilient flooring material that could stand up under the alkaline moisture conditions in concrete in direct contact with the ground. Now, in addition to asphalt tile, there is a choice of Armstrong Excelon Tile (vinyl-asbestos), Custom Corlon Tile (homogeneous vinyl), Rubber Tile, and Cork Tile.

Just announced as the newest choice for on-grade concrete subfloors is Armstrong sheet Corlon with Hydrocord* Back. This is the first and only sheet plastic flooring specially developed for installation over on-grade concrete.

For concrete subfloors below grade, all of these floors, with the exception of Cork Tile and sheet Corlon, may safely be specified, provided they are installed with the recommended Armstrong adhesive.

Beyond the increased variety of types of resilient floors for basements and basementless buildings there is also a wider choice of designs than ever before. New distinctive Spatter effects and Corkstyle* designs are now available in Armstrong Asphalt Tile and Excelon Tile in addition to the straight-grained tile. New subtle tone-on-tone tile effects—and the Terrazzo and Decoresq designs in Corlon—further broaden the decorative scope available.

The chart on the opposite page lists the various Armstrong Floors, their general characteristics, and the proper adhesives to use for installation over below-grade as well as grade-level concrete subfloors.

Many of the types of resilient floors on the market today were originally developed in the Armstrong Research and Development Center. Pictured above is one of the laboratory rooms where scientists measure the basic physical properties of the resilient flooring materials, underlayments, and adhesives of the future. For the years ahead, as in the past, the primary objective of Armstrong research is the development of floors with maximum service characteristics at minimum costs.

Armstrong FLOORS

LINOLEUM PLAIN · JASPÉ · SPATTER® · TEXTELLE® · DECORAY® · RAYBELLE® · ROYELLE® · MARBELLE® · TOWN HOUSE* INLAID · CRAFTLINE® INLAID · EMBOSSED INLAID · STRAIGHT LINE INLAID

ARMSTRONG RESILIENT FLOORS FOR USE OVER CONCRETE SUBFLOORS**

• ARMSTRONG ASPHALT TILE

This low-cost floor has long-wearing qualities and beauty unmatched by any other type of economy flooring material. Highly resistant to the effects of alkaline moisture, Armstrong Asphalt Tile is recommended for use on concrete in direct contact with the ground, on or below grade.

Armstrong Greaseproof Asphalt Tile, for areas where splashing or spillage of grease is a problem in addition to alkaline moisture; matches colors in the regular tiles.

Recommended Adhesives

On-Grade Concrete—Armstrong No. S-160 Emulsion
Below-Grade Concrete—Armstrong No. S-160 Emulsion
Dusty, Porous, or Damp Concrete—Armstrong No. S-90 Asphalt Cement, after priming with Armstrong No. S-80 Asphalt Primer

• ARMSTRONG ⅛″ GAUGE EXCELON TILE

The vinyl content in this vinyl-asbestos flooring gives it excellent resistance to grease and acids as well as the ability to withstand alkaline moisture. Moderate in cost, it is highly recommended for use over concrete subfloors on or below grade.

Recommended Adhesives

On-Grade Concrete—Armstrong No. S-160 Emulsion
Below-Grade Concrete—Armstrong No. S-160 Emulsion
Dusty, Porous, or Damp Concrete—Armstrong No. S-90 Asphalt Cement, after priming with Armstrong No. S-80 Asphalt Primer

• ARMSTRONG SERVICE GAUGE EXCELON TILE (1/16″)

Service Gauge Excelon Tile is a thinner gauge of the same vinyl-asbestos composition in ⅛″ Gauge Excelon Tile. It is recommended for use where low initial cost is an important factor. In a price range just above that of asphalt tile, Service Gauge Excelon Tile offers excellent resistance to grease, acids, harsh cleansers, and alkaline moisture.

Recommended Adhesives

On-Grade Concrete—Armstrong No. S-90 Asphalt Cement
Below-Grade Concrete—Armstrong No. S-90 Asphalt Cement
Dusty, Porous, or Damp Concrete—Armstrong No. S-90 Asphalt Cement, after priming with Armstrong No. S-80 Asphalt Primer

• ARMSTRONG RUBBER TILE

Now the exceptional beauty and durability of Armstrong Rubber Tile can be incorporated in luxurious interiors in basements and basementless buildings over concrete subfloors in direct contact with the ground. This provides the opportunity to specify a fine flooring material in keeping with the other elements of a high-style interior in such areas.

Recommended Adhesives

New On-Grade Concrete—Armstrong No. S-104 Chemical-Set Waterproof Cement or Armstrong No. S-225 On-Grade Cement
Cured On-Grade Concrete—Armstrong No. S-225 On-Grade Cement
Below-Grade Concrete—Armstrong No. S-104 Chemical-Set Waterproof Cement
Dusty or Porous Concrete—Armstrong No. S-104 Chemical-Set Waterproof Cement, after mopping floor with a damp mop
Exceptionally Damp Concrete—Installation not recommended

• ARMSTRONG CUSTOM CORLON TILE

Armstrong Custom Corlon Tile is a truly luxurious floor. Because it can be installed over both grade-level and below-grade concrete subfloors, it brings beauty to basements and basementless buildings. Made of the highest quality vinyl resins, this floor also is highly resistant to grease, acids, and most solvents. It is made in two finishes, a high gloss surface and a new exclusive "satin-matte" finish. The latter is available in Imperial Custom Corlon Tile featuring a smart terrazzo design. Both finishes are suited to the most luxurious interiors.

Recommended Adhesives

New On-Grade Concrete—Armstrong No. S-104 Chemical-Set Waterproof Cement or Armstrong No. S-225 On-Grade Cement
Cured On-Grade Concrete—Armstrong No. S-225 On-Grade Cement
Below-Grade Concrete—Armstrong No. S-104 Chemical-Set Waterproof Cement
Dusty or Porous Concrete—Armstrong No. S-104 Chemical-Set Waterproof Cement, after mopping floor with a damp mop
Exceptionally Damp Concrete—Installation not recommended

• ARMSTRONG CORK TILE

The beauty of Armstrong Cork Tile is especially suited to areas where an atmosphere of refinement and quiet dignity is desired. This handsome flooring can now be installed over on-grade concrete subfloors providing the top of the concrete slab subfloor is at least 12″ above grade level and the grade slopes away from the foundation.

Recommended Adhesives

On-Grade Concrete—Armstrong S-214 Waterproof Cement, providing top of concrete slab is at least 12″ above grade and grade slopes away from foundation
Below-Grade Concrete—Installation not recommended

• ARMSTRONG CORLON (with exclusive HYDROCORD backing)

This is the first and only sheet flooring specially manufactured for installation over on-grade concrete subfloors. The new Hydrocord backing, an exclusive Armstrong development, is unaffected by the alkaline moisture normally present in on-grade concrete. Corlon is today's most popular sheet plastic flooring, and its availability for "on-grade" installation opens up new decorative possibilities in basementless houses and light commercial interiors. The virtually seamless vinyl plastic wear surface is extremely resistant to grease, acids, and most solvents.

Recommended Adhesive

On-Grade Concrete—New, specially developed S-235 Hydrocord Adhesive. Bonds flooring directly to subfloor . . . no lining felt is used.

** NOTE: In addition to their usage on grade-level and below-grade subfloors, all of these Armstrong Floors can be installed on all types of suspended floors. All will provide satisfactory service when installed over radiant-heated concrete subfloors.

ARMSTRONG CORK COMPANY makes all types of resilient floors for all types of interiors. Almost any flooring problem can be met with one or more of the floors in the Armstrong Line. As a result, we can offer impartial recommendations to solve any flooring problem. Our main interest is to aid you in making a sound flooring selection. Armstrong Architectural-Builder Consultants throughout the country are glad to assist architects and help make specific recommendations for individual jobs. Your Armstrong representative is well experienced with resilient flooring. He can also call upon the Armstrong Research and Development Center and Bureau of Interior Decoration for assistance. For information on any flooring question, call your Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, Lancaster, Pennsylvania.

PLASTICS

CUSTOM CORLON® TILE
EXCELON® TILE
DECORESQ® CORLON
GRANETTE® CORLON
TERRAZZO* CORLON
MOSAIC* CORLON

RESILIENT TILES

ASPHALT TILE
Regular
Greaseproof
Conductive
RUBBER TILE
LINOTILE®
CORK TILE
CUSTOM CORK TILE
LINOLEUM TILE

*TRADE-MARK

Design it better with **PITTSBURGH GLASS**

New Penn Center in Philadelphia makes dramatic use of

Pittsburgh Glass

Towering over Philadelphia's business center is this clean-lined, rectangular, twenty-story building—the first in that city's new Penn Center project. Its facia features broad horizontal ribbons of Pittsburgh Glass with limestone spandrels. The ground story utilizes Pittsburgh Polished Plate Glass in its floor-to-ceiling glass "walls." The upper floors are glazed with Pennvernon® Heavy Sheet Glass. In addition, all entrances to this impressive structure are equipped with Pittsburgh's Herculite® Tempered Plate Glass doors and the enclosed vestibules are glazed with Pittsburgh Polished Plate Glass. Uris Brothers, Owners and Builders; Architects: Emery Roth & Sons, New York City.

THIS VIEW of one of the entrances to the new Penn Center office building shows how Pittsburgh's Herculite Tempered Plate Glass Doors combine to give this modern structure its high design appeal.

HERE, the director's room of Pennsalt—one of the prominent tenants occupying space in the Penn Center building—is separated from the adjacent hall by Pittsburgh Polished Plate Glass dividers.

Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 16a, 16d, 21.

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Von Duprin

FIRE AND
PANIC EXIT DEVICES

Sturdy...Safe...Selected

Type NC
Device

● Tough, enduring service goes hand in hand with smart modern design when you put Von Duprin Narrow Concealed Exit Devices on the job! Vertical rods are spring actuated, opening smoothly and quietly at a touch of the crossbar. Like all Von Duprin devices, they're precision engineered with the finest materials and construction, ready to absorb the heaviest service with only normal maintenance.

Tested *before* being marketed; proved by years of *on-the-job* service . . . the NC device is a sleek, reliable answer to "the safe way out!"

VONNEGUT HARDWARE CO. • VON DUPRIN DIVISION • 402 W. MARYLAND ST. • INDIANAPOLIS 9, INDIANA

For Genuine Beauty . . . specify new "TERRAZZO" pattern

There's more vinyl in every tile of *Bolta Floor*... stays beautiful longer ...with or without wax!

Also available in 22 marbleized and solid colors!

Here is the rich, authentic beauty of old-world terrazzo—in wonderful, modern, "soft-to-the-step" Bolta-Floor vinyl tile! Bolta-Floor is a high-content, homogeneous vinyl floor tile that assures longest wear and lowest possible maintenance costs. Bolta-Floor will keep its gleaming beauty through years of hard use!

"Terrazzo" Bolta-Floor is produced in 15 beautiful decorator colors—and in 6 x 6, 9 x 9, 12 x 12 and 18 x 18 tile sizes (⅛" or .080" gauge).

Don't settle for less! Get the *genuine* beauty of new Bolta-Floor "Terrazzo."

For samples write:

THE GENERAL TIRE & RUBBER COMPANY

FLOORING DIVISION • AKRON 9, OHIO

Jet engine test cell . . . inner and outer double Jamison Sound Reduction Doors

Let Jamison Sound Reduction Doors squeeze the decibels out of those big noises

Jamison Sound Reduction Door used for access to control room

Look at it this way: You've got to have real stopping power to muffle the thunderous roar pouring out of a jet engine test cell, or a turbo prop engine or a reciprocating engine. For fifteen years Jamison Sound Reduction Doors have been toning down these big uproars —effectively, economically.

Jamison "Mass Principle" Construction

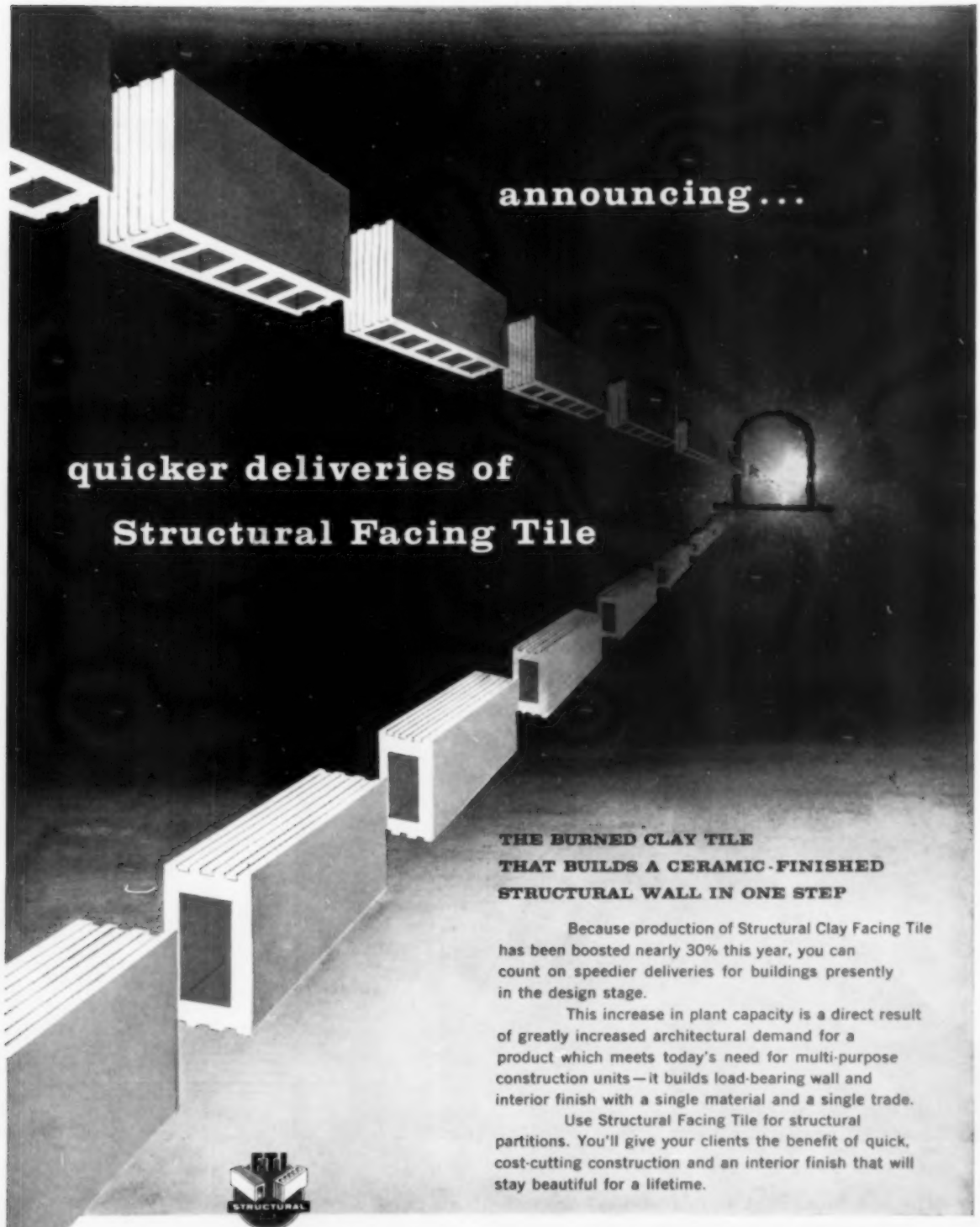
Long ago Jamison found out that the main factor in minimizing sound transmission through a structure is weight per unit area. And this is the principle Jamison has applied in successfully designing and building Sound Reduction Doors.

If noise is your big headache—and is giving pain to lots of others—it will pay you to investigate Jamison S-R Doors. Depend on Jamison for authoritative, up-to-the-minute information that can help you toward an effective solution of your problem. Meanwhile, write to Jamison for a copy of Bulletin 16-F.
Jamison Cold Storage Door Company, Hagerstown, Md.

JAMISON

engineered doors

For 50 years the leading builder of cold storage doors


announcing...
quicker deliveries of
Structural Facing Tile
THE BURNED CLAY TILE
THAT BUILDS A CERAMIC-FINISHED
STRUCTURAL WALL IN ONE STEP
Because production of Structural Clay Facing Tile has been boosted nearly 30% this year, you can count on speedier deliveries for buildings presently in the design stage.
This increase in plant capacity is a direct result of greatly increased architectural demand for a product which meets today's need for multi-purpose construction units—it builds load-bearing wall and interior finish with a single material and a single trade.
Use Structural Facing Tile for structural partitions. You'll give your clients the benefit of quick, cost-cutting construction and an interior finish that will stay beautiful for a lifetime.
FTI
STRUCTURAL

In the interest of better Facing Tile construction these companies have contributed to this advertisement.

CHARLESTON CLAY PRODUCTS CO.
Charleston 22, West Virginia

THE CLAYCRAFT CO.
Columbus 16, Ohio

HAPLETON CLAY PRODUCTS CO.
Canton, Ohio

METROPOLITAN BRICK, INC.
Canton 2, Ohio

McNEES-KITTANNING CO.
Kittanning, Pennsylvania

NATCO CORPORATION
Pittsburgh 22, Pennsylvania

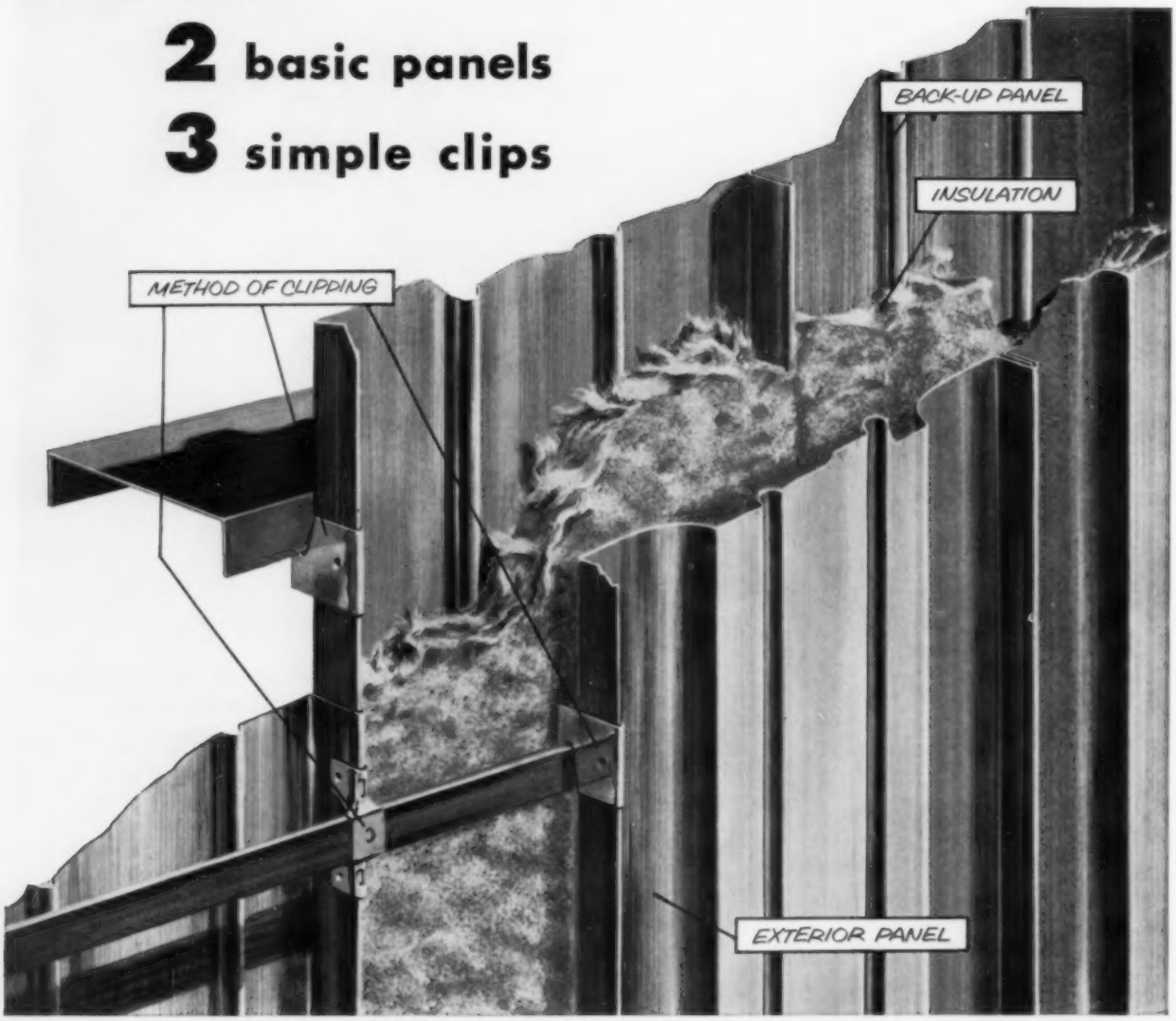
STARK CERAMICS, INC.
Canton 1, Ohio

WEST VIRGINIA BRICK CO.
Charleston 24, West Virginia

FACING TILE INSTITUTE

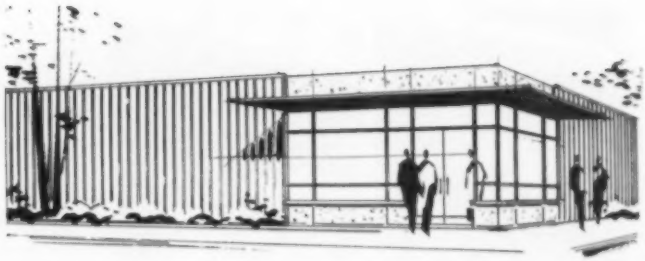
1520 18th Street, N. W., Hudson 3-4200, Washington 6, D. C.
1949 Grand Central Terminal, Murray Hill 9-0269, N. Y. 17, N. Y.
2556 Clearview Avenue, N. W., Canton 5-5329, Canton 8, Ohio
228 N. LaSalle St., Randolph 6-0578, Chicago 1, Ill.

Enclose a complete building with new *Stran-Satin* Curtain using 1 tool 2 basic panels 3 simple clips



The new Stran-Steel curtain wall system with exclusive *Stran-Satin* combines a satin-smooth finish, free of spangled patterns, with the protection of a noncorrosive zinc coating. You get the low cost of steel, plus the eye-appeal of far more expensive materials. Stran-Steel curtain wall system consists of two basic panels and has a simple field erection assembly technique. Panels are never pierced or marred by bolts, screws or rivets. By using special clips and a crimping tool, you get a smooth, leakproof surface. This assembly technique provides a modern method of wall or fascia construction for industrial, commercial, recreational, school, hospital or other public buildings. And buildings go up fast so other trades can begin work sooner.

Wall System



Back-up panel is clipped to horizontal girts of the building's framework. At the joints, the panels overlap and interlock.

Ten-foot steel bars are clipped horizontally and are on 4-foot centers. The clips are crimped to provide a permanent assembly.

Noncombustible insulation is inserted between the back-up panel and the steel bars.

Exterior panel is clipped to 10-foot bar and crimped in place. Next panel overlaps and covers clip for an unbroken surface.

Stran-Steel curtain wall is a quality product designed to meet strict architectural requirements.

EXTERIOR PANEL

Exterior panel is heavy gage steel with *Stran-Satin* finish. Continuous lengths up to 54 feet can be furnished in three gages—18, 20 or 24.

BACK-UP PANEL

Back-up panel is also available up to 54-foot lengths in three gages with exclusive *Stran-Satin* finish. Offset construction eliminates metal-to-metal contact increasing insulating efficiency and reducing condensation.

INSULATION

Sections are designed for 1½-inch batt-type insulation. With a "U" factor of 0.14, this panel has the insulating efficiency of a 16-inch masonry wall.

Here's where you can get more information:

Atlanta 3, Ga., 206 Volunteer Bldg.
Cleveland 15, Ohio, 20950 Center Ridge Rd.
Detroit 29, Mich., Tecumseh Rd., Ecorse
Houston 5, Tex., 2444 Times Blvd.
Minneapolis 4, Minn., 708 S. 10th St.
Kansas City 16, Mo., 1322 Burlington
San Francisco 4, Calif., 235 Montgomery St.
Washington 6, D.C., 1200 18th St., N.W.

STRAN-STEEL CORPORATION
Ecorse, Detroit 29, Michigan • A Unit of
NATIONAL STEEL CORPORATION

56-SS-46A

For complete details on this new Curtain Wall Panel call your local Stran-Steel Architectural Products dealer or mail this coupon.

Stran-Steel Corporation
Ecorse, Detroit 29, Michigan

☐ Please send literature described above.
☐ Please have your representative contact me.

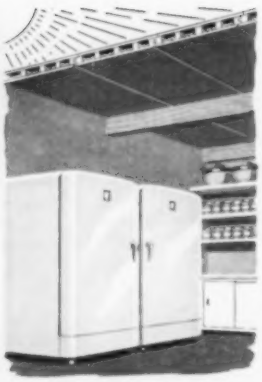
Name_____

Company_____

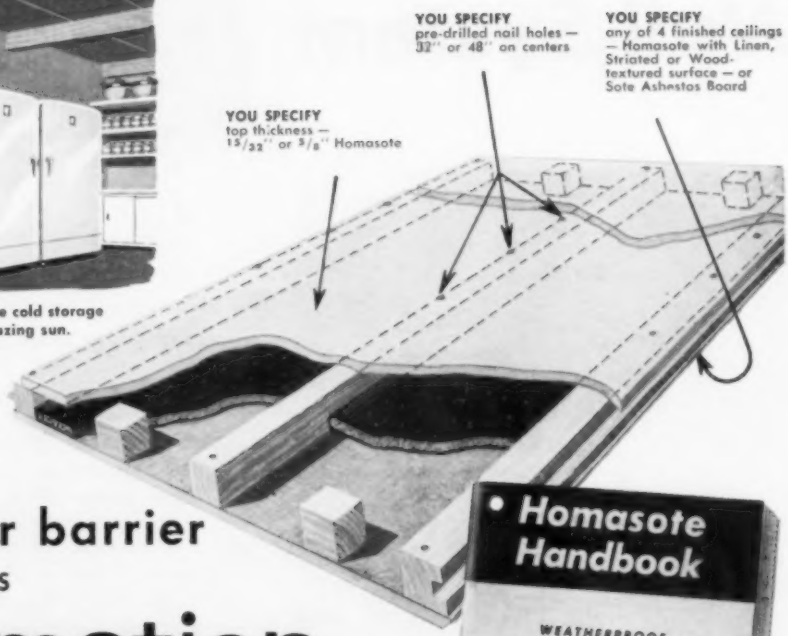
Street_____

City_____ Zone_____ State_____ P

Between the furnace room and a blanket of snow.



Between the cold storage and the blazing sun.

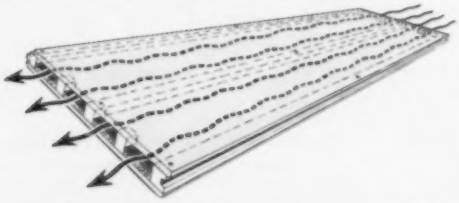


HERE IS THE

scientific vapor barrier

FOR ALL ROOFS

air in motion



The final answer to condensation is nature's own principle of air circulation. In contrast with partial, mechanical vapor barriers — air ventilation, the normal flow of air in and around any structure, is truly a simple, dynamic solution to a fundamental weather problem. Now thoroughly tested and demonstrated successful, Wilson Air-cor Roof Decking embodies the air-in-motion principle in its most complete and scientific form.

Wilson Air-cor is a rugged 2′ x 8′ panel with 16″ of open space at each end for air to flow freely in four air channels from panel to panel — across the entire length of any roof. Homasote boards over three 2 x 2 wood members, with batt-type insulation encased in vapor barrier paper on the lower inside, constitute the primary materials. But Air-cor is much more than this description can indicate.

Besides being the only complete answer to condensation — Wilson Air-cor Roof Decking is, *in one material*, a sturdy roof, the best insulation known, a sound-deadening partition, and a finished ceiling. Wilson Air-cor is available in two different top thicknesses and four different ceiling finishes, including Sote Asbestos Board for fire protection. Any one familiar with Homasote Insulating-Building Boards will recognize at once the advantages of this long-proven material.

The designing and production of this remarkable product illustrate a typical example of the thoroughness of research and practical testing behind each Homasote product. The Homasote Handbook — newly revised throughout all 68 pages — describes in detail a hundred other construction values. On each page of this fully-illustrated booklet every architect, builder, and dealer finds ideas of new construction and modernization that fit in with his quality plans. As is the case with Wilson Air-cor, Homasote products are designed to give only the finest service — and yet the **know-how** behind each product makes every one an economy item.

We are proud of the Homasote Handbook, and would like to place a copy in your hands, without cost or obligation. Kindly address your inquiry to Department J-12.

HOMASOTE COMPANY

TRENTON 3, NEW JERSEY

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated

MAHON CHAIN-GEAR OPERATOR

MAHON STANDARD POWER OPERATOR 920-P

For openings in industrial plants, warehouses, loading docks in commercial buildings, and railroad transfer docks, rolling steel doors offer the advantages of permanence, lower maintenance, greater security and protection against intrusion and fire, and the important space-saving and timesaving features of vertical roll-up action. No other type of door can compare with the everyday operating convenience of an electrically controlled power operated rolling steel door. The vertical roll-up action occupies no usable space either inside or outside of the door opening. There are no overhead tracks or other obstructions to interfere with crane handling adjacent to door openings—the door curtain is compactly rolled up above the lintel safe from damage when the door is open. Quick-opening, quick-closing Power Operated Rolling Steel Doors, with signal arrangements and remote push-button control stations, offer the ultimate in convenience and timesaving operation . . . and their all-metal construction gives you the permanence which assures a lifetime of trouble-free service. However, before you select a Rolling Steel Door, check Specifications carefully . . . you'll find extra-value features in Mahon doors—for instance, the galvanized material in Mahon curtain slats is BONDERIZED and DIP-COATED with synthetic enamel which is baked on at 350°F. prior to roll-forming. You will find many other quality and design features in Mahon Rolling Steel Doors that add up to a greater over-all value. See Sweet's Files for information including Specifications, or write for Catalog G-57.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Roof Decks and Long Span M-Decks; Permanent Floor Forms; and M-Floors (Electrified Cel-Beam Floor Systems).

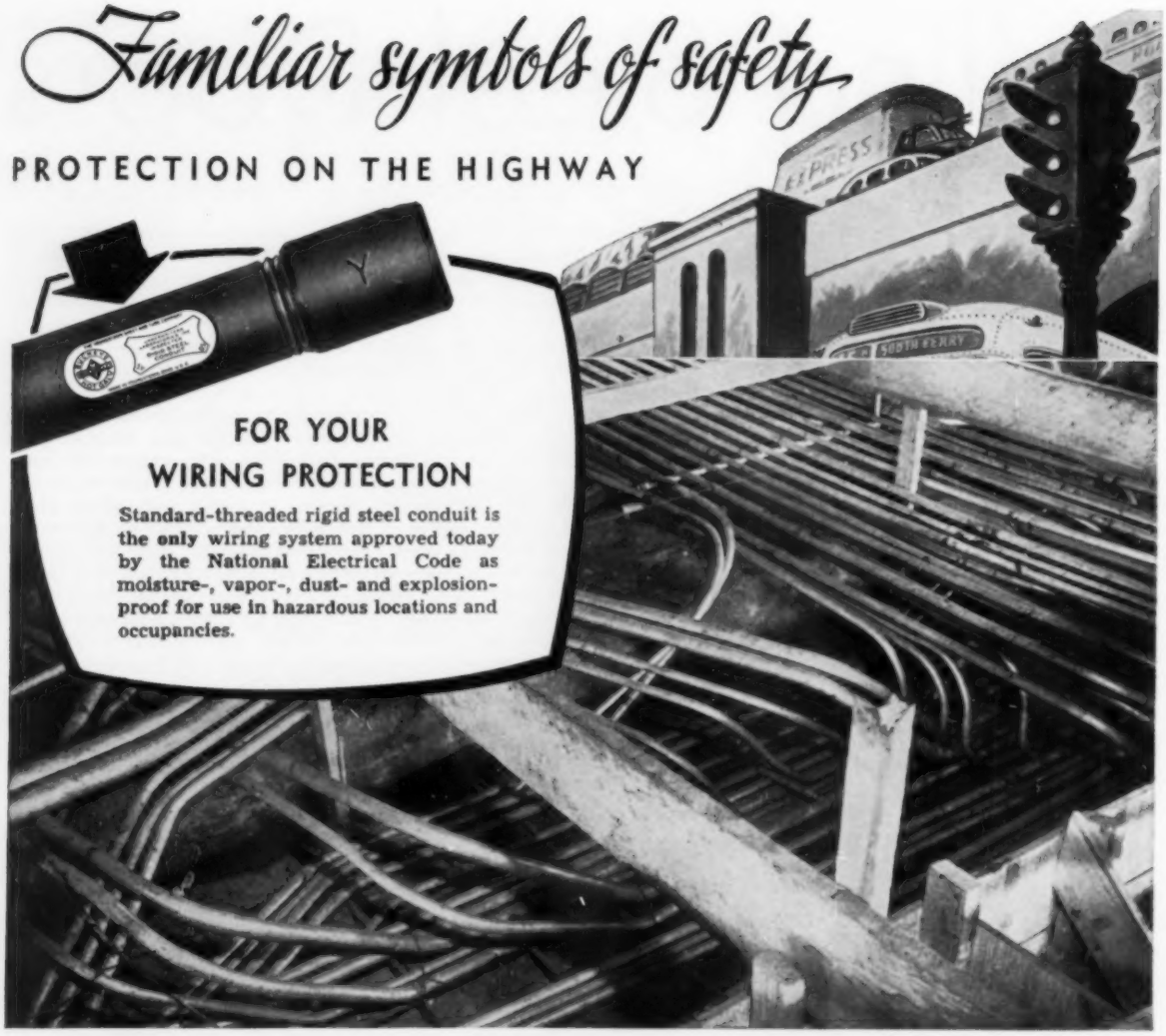
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Three Mahon Power Operated Rolling Steel Doors 23 Ft. x 16 Ft. installed in double truck openings in an enclosed loading dock in Udylite Corporation's new plant in Detroit, Mich. O'Dell, Hewlett & Luckenbach, Architects. Barton-Malow Co., Gen. Contrs. Two more Mahon Power Operated Rolling Steel Doors 17'-2" x 23'-0" are installed in railroad openings in this new, modern plant.

MAHON

Familiar symbols of safety

PROTECTION ON THE HIGHWAY



FOR YOUR WIRING PROTECTION

Standard-threaded rigid steel conduit is the only wiring system approved today by the National Electrical Code as moisture-, vapor-, dust- and explosion-proof for use in hazardous locations and occupancies.

Leading owners, contractors and architects today realize that electrical systems that do not function safely and efficiently are definitely a bad investment. To guard against this costly condition they specify Youngstown "Buckeye" full-weight rigid steel conduit for its long trouble-free service life.

"Buckeye" Conduit is easy to fabricate in the field—easy to fish wires through—and thoroughly corrosion-resistant to damaging elements such as water, moisture, vapor, dust and dirt.

As Youngstown is the only producer of rigid steel conduit that controls all processes from ore mine to shipping dock, you can be assured each length is of the same high quality that has made it the accepted standard of users everywhere.

Keeping your important jobs on schedule—even for covering emergency needs—is the main reason for your Youngstown distributor's ample stocks of "Buckeye" Conduit. His fast, efficient service is available for a phone call. Let him know your requirements today.

QUALITY YOUNGSTOWN SERVICE

Ask your distributor for Youngstown Buckeye Full Weight Rigid Steel Conduit and Youngstown Electrical Metallic Tubing.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel

General Offices - Youngstown 1, Ohio

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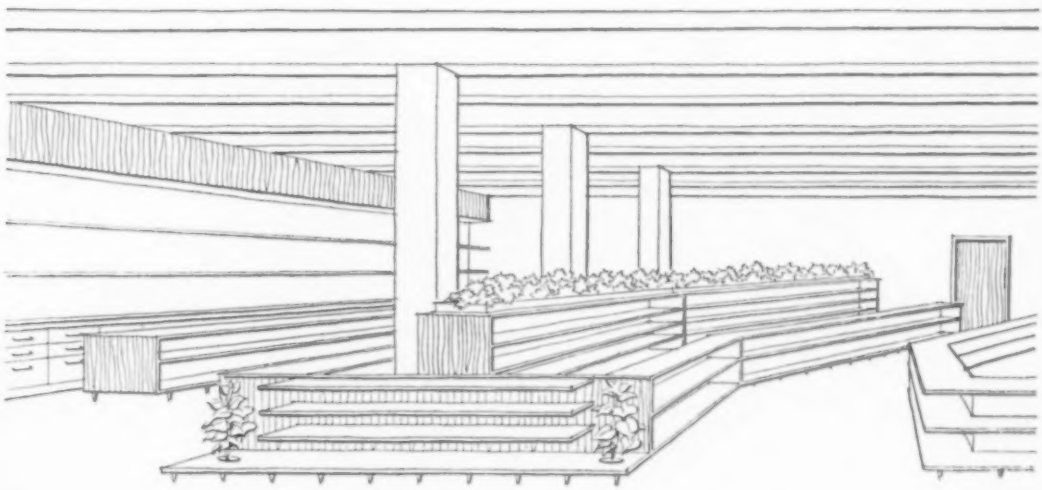
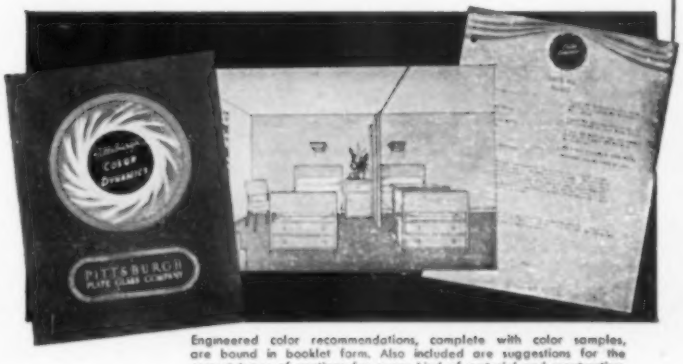


You Can Get a Complete

Engineered Color Study for Your Plans–FREE!



Engineered color recommendations, complete with color samples, are bound in booklet form. Also included are suggestions for the correct types of coatings for every kind of material and construction.

YOU can often make your plans more acceptable to your clients by including a detailed color program.

● **Almost everyone** who owns or operates an industrial, commercial or service enterprise recognizes the importance of the influence of color upon people. That's why such a detailed program of color recommendations often can be very helpful.

● **Why not let us submit** *engineered* color recommendations to go with your plans? These recommendations are based upon the principles of Pittsburgh's system of COLOR DYNAMICS®. This method of painting has successfully demonstrated its ability to improve productive efficiency, morale and well-being in many fields.

● **We'll be glad** to make such a detailed study for you without cost or obligation. Simply call your nearest Pittsburgh Plate Glass Company branch and arrange to have one of our color consultants see you at your convenience. Or mail coupon at right.

For Additional information on COLOR DYNAMICS see Sweet's Architectural File, Section 14/Pi.

MAIL THIS COUPON TODAY

Pittsburgh Plate Glass Company
Paint Division, Dept. PA-96
Pittsburgh 22, Pa.

Gentlemen:

☐ Please have your representative provide us with further information about Pittsburgh's free COLOR DYNAMICS engineering service for architects.

☐ Please send free copy of your booklet on COLOR DYNAMICS for ____industry; ____hospitals; ____schools; ____commercial buildings.

NAME_____

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CITY_____ COUNTY_____ STATE_____

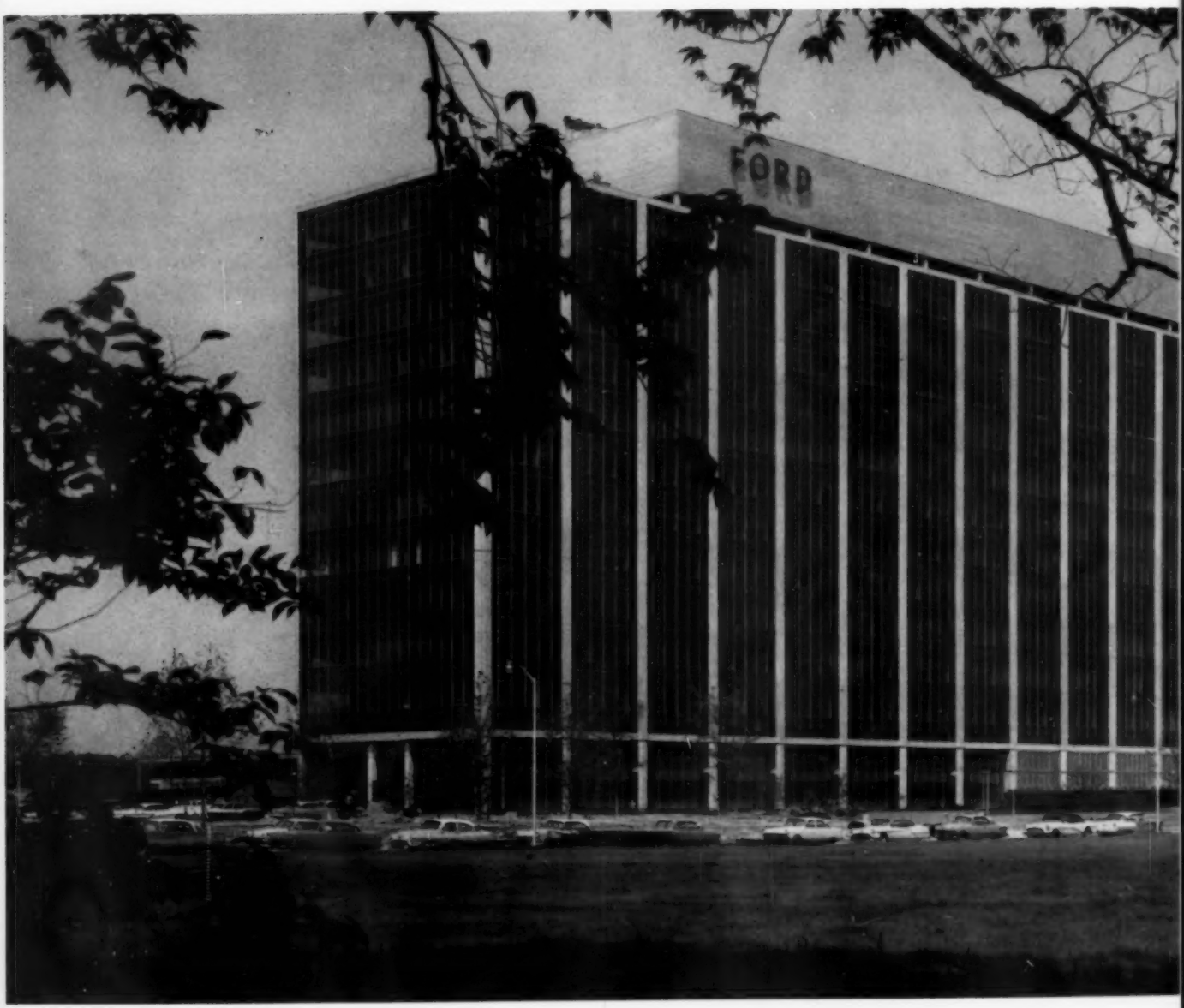
PITTSBURGH PAINTS

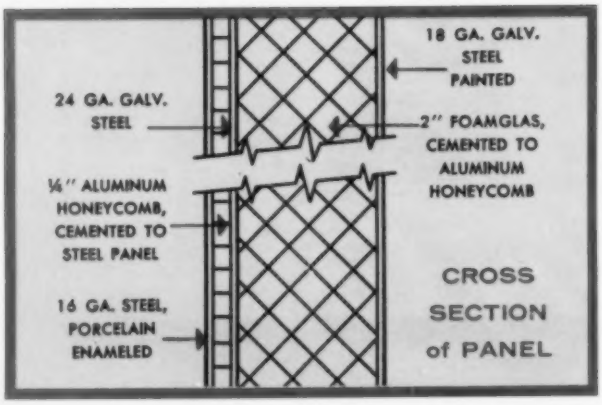
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

World's largest porcelain-enameled




18 GA. GALV. STEEL PAINTED
24 GA. GALV. STEEL
2" FOAMGLAS, CEMENTED TO ALUMINUM HONEYCOMB
½" ALUMINUM HONEYCOMB, CEMENTED TO STEEL PANEL
16 GA. STEEL, PORCELAIN ENAMELED
CROSS SECTION of PANEL

curtain wall installation

Architect: Skidmore, Owings & Merrill, New York.
Panels Porcelainized and Fabricated by:
Ingram-Richardson Mfg. Co., Beaver Falls, Pa.
Builder: Bryant & Detwiler Co., Detroit.

made from USS Vitrenamel Sheets

Observers have said that the Ford Central Staff Building in Dearborn has "one of the most durable curtain walls ever built."

Each panel is really a five-piece sandwich, with an outer surface of 16-gage porcelain-enameled steel bonded to a ¼" expanded honeycomb for absolute flatness. Then comes a sheet of 24-gage galvanized steel, two inches of cellular insulation and an 18-gage galvanized steel interior skin. Everything is laminated together to form a single-piece wall panel.

The panels are used in combination with tinted, heat-absorbing glass, and the effect is completely impressive. The entire building seems actually to radiate a soft, blue-green light (which is the color of the porcelain-enameled steel panels).

This is truly modern design, simple and handsome.

The steel panels are only 2½" thick, and they weigh only 7½ pounds per square foot. Substantial savings are possible due to the light weight (lighter structural framework required), the high insulation value (U= .15) and the speedy erection routine—reflected in the fact that a six-man crew can install about four panels per hour. Some 90,000 square feet of paneling was used on this building (6,616 panels), and at the time of writing, this was the largest use of porcelain-enameled steel in a single structure.

For richness of color, durability and low cost, porcelain-enameled steel is unique in the field of curtain wall materials. When combined with structural steel (for strength) and stainless steel (for appearance or contrast coloring), you can create endless design variations that meet all the standards of good engineering practice.

For more information, write to United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.

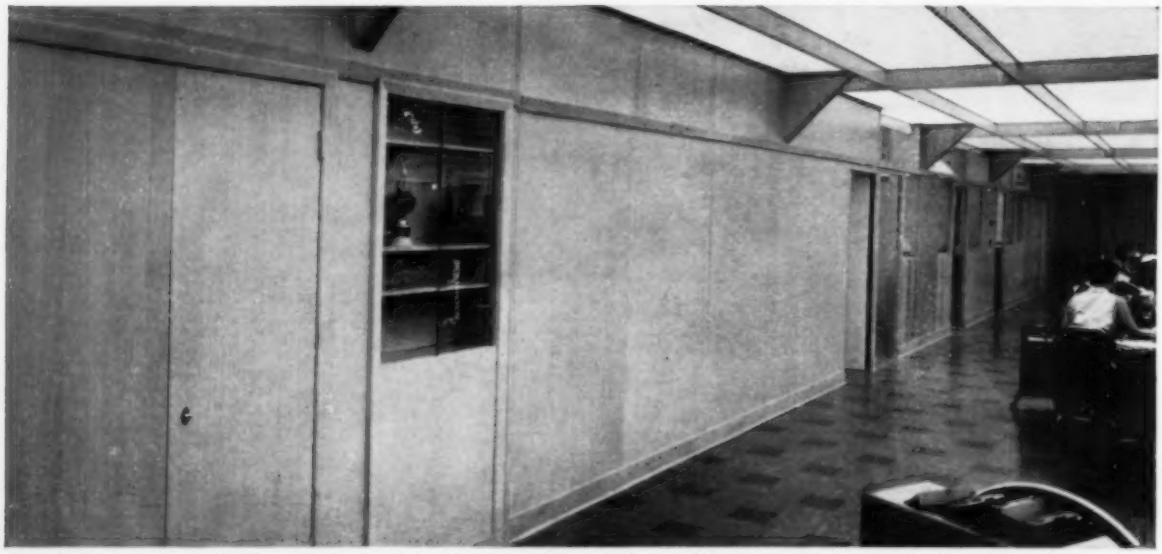
USS

USS STEELS FOR ARCHITECTURAL DESIGN

USS Stainless Steel • USS Structural Steel • USS Vitrenamel Sheets

UNITED STATES STEEL

From factory space to wood-paneled offices quickly and economically with Weldwood Movable Partitions



Faced with a shortage of offices, the Aurora Pump Company, of Aurora, Ill., used Korina and Natural Birch Weldwood Movable Partitions to turn idle factory space into extra offices. Matching hardwood paneling covers unsightly girders and columns, while corrugated Fiberglas does double duty: hides factory ceiling . . . gives soft, diffused light. It's hard to believe this corridor was formerly factory space. Real wood-faced partitions end painting and redecorating costs . . . need only an occasional waxing to stay beautiful forever.

Exclusive metal-key joining system keeps Weldwood Movable Partitions a solid wall—yet allows them to be quickly moved or rearranged. It's so easy, untrained workmen can create new office arrangements *overnight*. Partitions have a core of Weldrok®—an incombustible material that tends to reduce noise transmission.

Aurora Pump Co. picked Korina®—blond, African hardwood—for the partitions forming this office. Matching Weldwood flush doors carry out décor. Weldwood Movable Partitions also come in oak, birch, mahogany and other fine woods. They more than satisfy today's two top office demands: beauty and flexibility.

Distributor: Hartmann-Sanders Co., Inc.

Send coupon for specifications and installation data. Or for further information on Weldwood Movable Partitions call any of our 87 offices in principal cities. In Canada: Weldwood Plywood, Ltd.

Weldwood®
MOVABLE PARTITIONS
A product of
UNITED STATES PLYWOOD CORPORATION
Weldwood—The Best Known Name in Plywood

United States Plywood Corporation
55 West 44th St., New York 36, N. Y.

Gentlemen: ☐ Please send full information on Weldwood Movable Partitions.
☐ Please have representative call. PA 9-56

NAME.....
COMPANY.....
ADDRESS.....
CITY.....STATE.....

new dimension...

in fixture value with THE *new* SMITHCRAFT FINISH

Smithcraft now adds a new dimension in fixture perfection. The new Smithcraft painting process consists of the finest and most modern Bonderite and Baked Enamel Finish combination in use in the lighting industry today.

In addition to its superior appearance, the new Smithcraft finish has these outstanding qualities:

Adheres firmly to metal — Stays white indefinitely, without yellowing — Provides positive resistance to chemicals and heat — Resists abrasion because of optimum hardness — Reflects a maximum percentage of light

Because the new Smithcraft finish possesses all these attributes to a greater degree than ordinary finishes, it produces many important new benefits for owners and users of lighting . . . better appearance, better lighting qualities, easier maintenance and longer, trouble-free life.

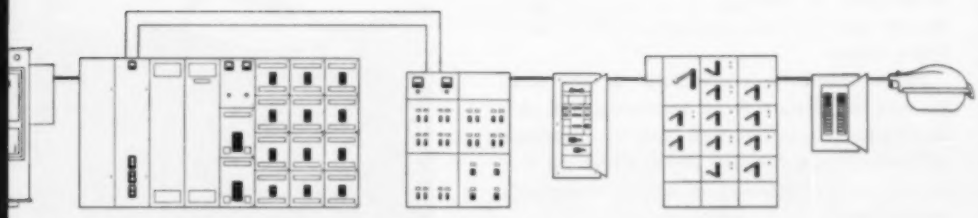
All the units in the complete and diversified line of Smithcraft commercial and industrial fixtures are now finished with this new process. Typical is the Sheraton (shown above) . . . a trim, modern unit, only 3¼" deep; the Sheraton is ideal for low-ceiling applications. It is available for two and four-lamps in 4-ft. and 8-ft. lengths. Plan to use the Sheraton in your next school, store or office design.

Ask us to send you the current Smithcraft catalog . . . it is a compilation of the newest and most functional fluorescent fixtures in use today

Smithcraft
LIGHTING
CHELSEA 50, MASSACHUSETTS

America's finest fluorescent lighting

The electrical system story behind new St. Louis award-winning airport*



Behind the dramatic façade of St. Louis's Lambert Municipal Airport, electrical equipment by Westinghouse plays a most important role. It supplies the power and light for customer conveniences and the operation of this AIA award-winning building.

The services of electrical specialists, whose job it is to work with contractors during planning and installation stages, were contributed by Westinghouse for this project. These men comprise the Westinghouse Complete Planning Service team.

Representing Westinghouse was a construction sales engineer (pictured above). Electrical products in the terminal are shown on the following pages. Not illustrated, but included, were two 112½-kva transformers, heating and air-conditioning fans, 11 special-relay panels for remote control of the lighting, and motors and individual motor controls—all by Westinghouse.

This same planning service and equipment are available to you on any type project. Call the Westinghouse man in your area. You can be sure if it's Westinghouse. (*Continued next page.*)

DP-5024-A

WATCH WESTINGHOUSE!

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

*Hellmuth, Yamasaki and Leinweber, architects.
Landrum and Brown, airport consultants.
Ferris and Hamig, electrical and mechanical consulting engineers.
Mack Electric Co.—Ledbetter Electric Co., electrical contractors.
Conway Briscoe, Director, Public Utilities, City of St. Louis.

To speed maintenance and inspection, Westinghouse breakers draw out horizontally. Low-voltage equipment illustrated.

New airport uses modular switchgear as power fulcrum

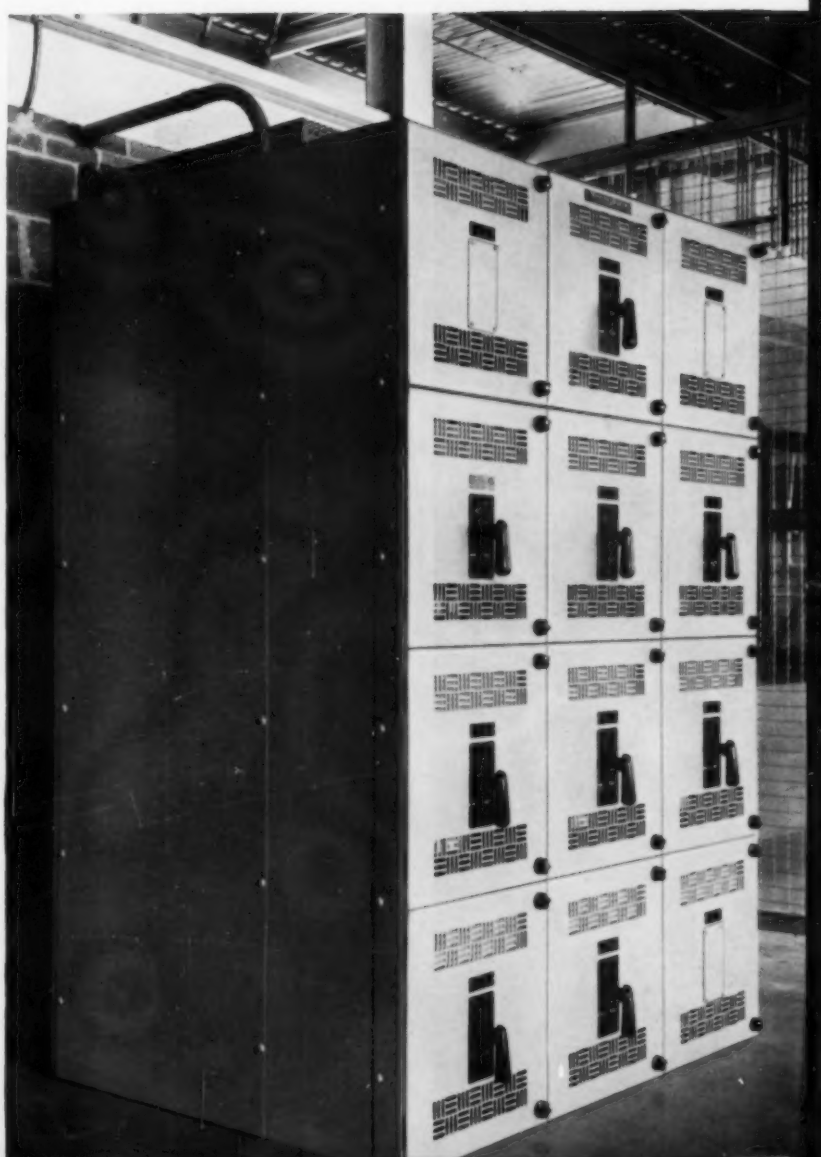
How to distribute low-voltage power in the new airport posed a problem. It was overcome by using Westinghouse low-voltage switchgear in strategic areas as a fulcrum. And it was done economically, without sacrificing safety.

From locations convenient to the load yet not too distant from incoming bus, this equipment, actually standardized modules of low-voltage breaker units, slices up and feeds power to lighting, machines, and panelboard lines.

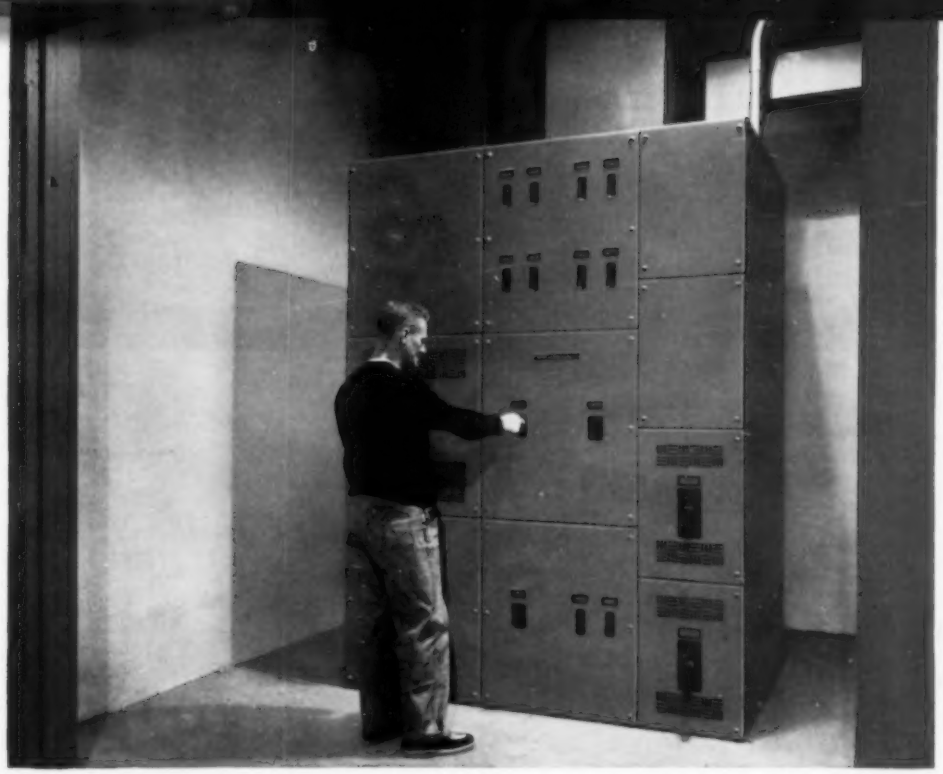
Because Westinghouse uses a standardized unit, new ones can be added as air traffic grows and the need for power increases. Because of its modular design they will be added at the lowest possible cost.

This same modular planning enables Westinghouse to pass on manufacturing and assembly cost savings to customers.

In the St. Louis airport a combination of experience of the consulting engineers, the electrical contractors and Westinghouse helped produce this result. For electrical products and planning, you can be sure if it's Westinghouse. DP-5024-B



For power handling and control, Westinghouse indoor low-voltage switchgear (right) used in St. Louis airport.



Positive breaker handle identification shows immediately when circuit has been interrupted. Circuit trouble spotted quickly.

Custom-designed Westinghouse switchboards control vast electrical network

Keeping customer and employees comfortable while moving tons of freight and baggage through the new terminal required an electrical system resembling an intricate maze. At least, it would appear that way to a layman.

Not so to the personnel working with the equipment. Nor to the electrical contractors on the installation. Along with the products of proven efficiency, Westinghouse delivered quite a bit of engineering skill to simplify that network.

Two building-type switchboards (similar to above) split incoming high-voltage power into smaller segments. Dead-front construction by Westinghouse provides greater safety. And because they are compact, factory-assembled units, easy to mount and wire, installation costs were low.

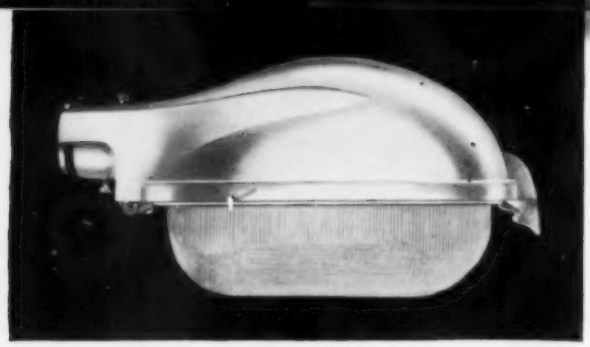
Breakers inside these centers feed power and lighting distribution panelboards in various locations around the building. From these on-the-spot points, all equipment can be controlled safely and efficiently. Without specially trained personnel, in many cases, too, because the Westinghouse "De-ion®" protected circuit breakers safeguard men and machines against danger from overloads.

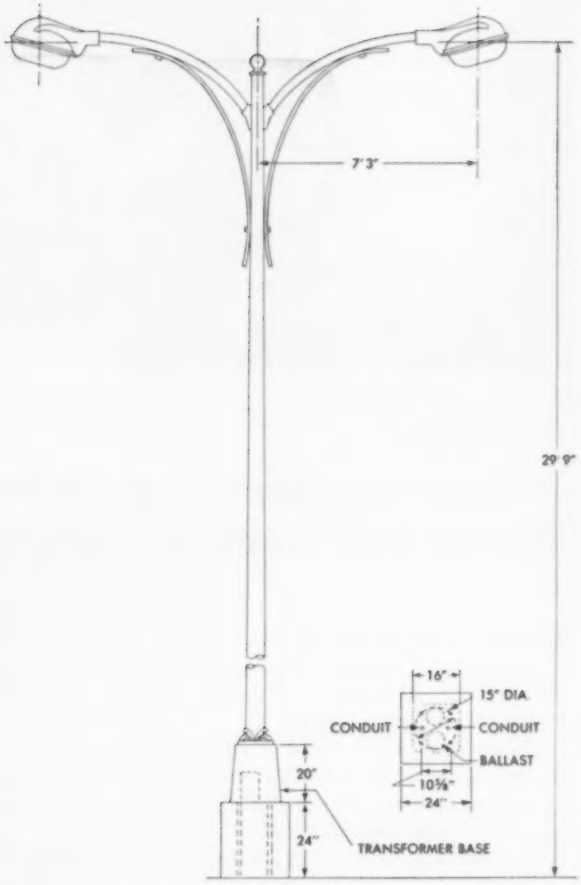
DP-5024-C

Just a flip of the breaker handle restores service in Westinghouse panelboards. "De-ion" circuit breakers trip only when dangerous overloads or short circuits occur.

WATCH WESTINGHOUSE!

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU**!*





New easy-to-maintain lighting combines beauty with function

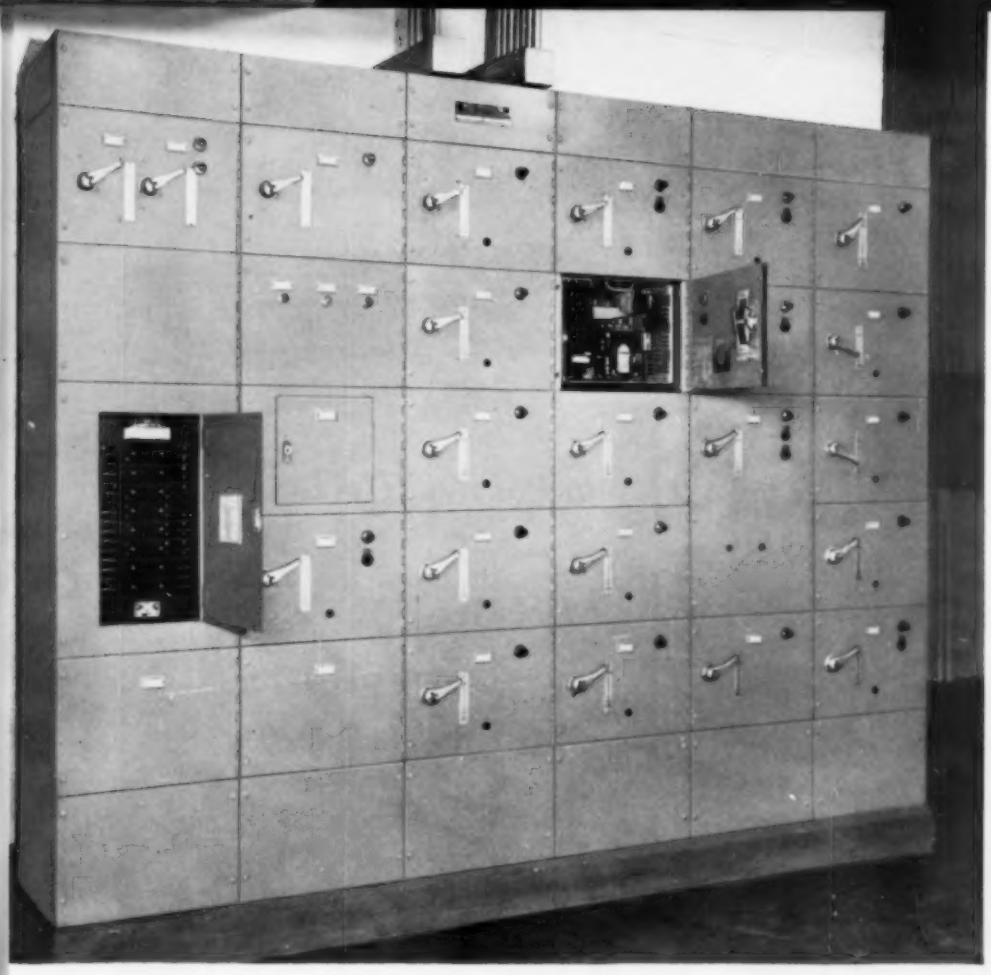
Parking space equal to nearly five miles of highway, a real convenience for airport customers, might have created a lighting problem. However, the installation by Westinghouse of a new idea in luminaires helped solve the situation during planning stages.

Lighting the area (shown during daylight below) are Westinghouse OV-20 luminaires. Besides offering a beautiful new design, an important contribution during the daytime, these fixtures provide a high lighting efficiency. Because of their design, just one hand is needed to open the sturdy glassware shield for reflector cleaning or lamp replacement. An assurance of low maintenance bills.

The luminaires are weatherproof. A felt gasket on the housing flange does this. The entire housing is made of lightweight aluminum alloy casting.

And that's not all. There are many more advantages of the Westinghouse OV-20 luminaire you should know about. Ask the Westinghouse man in your area. You can be sure if it's Westinghouse.

DP-5024-D



Westinghouse control centers save thousands of footsteps daily

In the new St. Louis airport, thousands of steps are saved daily with the grouping of all motor controls in neat, compact Westinghouse control centers. One group of enclosures centralizes an entire system's controls.

No wandering through customer or work areas to service and operate controls is necessary. A few authorized individuals can supervise all operations. And this way the system layout was made simpler and more effective.

There was no need to hide the control centers from the public either. Westinghouse control centers are a neat-appearing compact setup. Standardization of units during manufacturing helps create this effect and, at the same time, lowers installation costs considerably. A saving passed on to contractor and owner.

On airport terminals, or any type of project you may be planning, Westinghouse will be glad to lend their experience when you need it. One call to Westinghouse is all you have to make. And you can be sure if it's Westinghouse. DP-5024-E

Westinghouse Complete Planning Service Team is ready to go to work with you on your next project. Call them in at once.

WATCH WESTINGHOUSE!

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU**!*

There are many good reasons why the store chose this door. And the fact that it opens easily is only one. The Flour City balanced door will give years and years of trouble-free service. Traffic flow is more than doubled. The folding action lessens projection into vestibule or over sidewalk area. All Flour City balanced doors are equipped with hydraulic check and bumper, automatic hold-open, and easy access to two-speed adjustments. Furthermore, Flour City doors are precision made and have the most precise action and performance that the finest materials and craftsmanship will provide.

So, when you consider the great advantages of balanced doors, including the customer convenience, be sure you check the advantages of Flour City balanced doors. Made better to last longer . . . and open easier.

FC

See our catalog in Sweet's file on doors

16a
FL

The **FLOUR CITY** *Ornamental* **IRON COMPANY**

2637 27TH AVENUE SOUTH • MINNEAPOLIS, MINNESOTA

Sanymetal Junior Height Compartments installed in an elementary scho

Now, Sanymetal JUNIOR HEIGHT *compartments for schools*

(more economical than full height compartments)

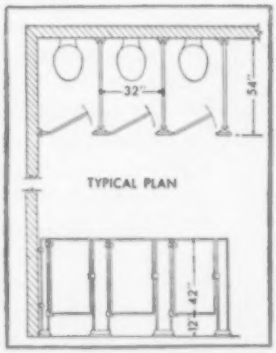
QUALITY construction features, that make Sanymetal Toilet Compartments enduring and low in maintenance cost, are a necessity for school installations. Now Sanymetal offers such compartments, scaled right for kindergarten, primary and elementary grades.

These JUNIOR HEIGHT compartments have all Sanymetal construction features that make Sanymetal Compartments durable — including *door panels welded*, so they stay flat and in line, even if severely abused — *hinges so strong* that a heavy man can swing on the doors without harming the hinges — *trouble-free floor connections* for firm, rigid installations.

Low over-all height of Sanymetal JUNIOR HEIGHT Compartments is right for proper observation by supervisors, while affording the child privacy from other children. Their cost is lower than that of conventional full height stalls — giving you a saving from the start.

Specify Sanymetal, to be sure of getting the quality features which offer economy in installation, lasting economy in maintenance, and attractiveness.

See Sweet's, or send for Catalog 93 describing all Sanymetal Compartments. If you wish we will mail you all advertisements in this series explaining construction details that mean quality.



TYPICAL PLAN AND ELEVATION showing recommended dimensions.

LOOK FOR THIS

NAMEPLATE WHICH IDENTIFIES EVERY SANYMETAL INSTALLATION

Sanymetal® PRODUCTS COMPANY, INC.

1683 URBANA ROAD • CLEVELAND 12, OHIO

6433J East Canning St., Los Angeles 22, California

JUNIOR HEIGHT *Compartments offer standard Sanymetal features at lower intial cost*

Now—for maximum Roof Protection Johns-Manville

Aquadam

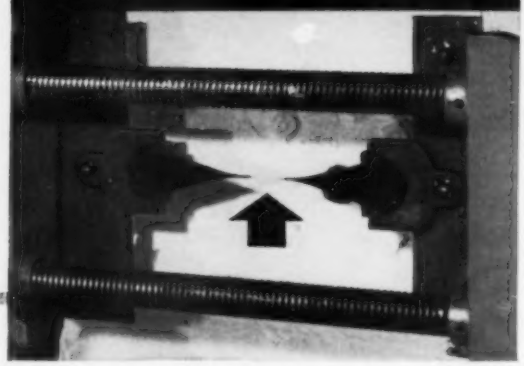
(slag or smooth surfaced)

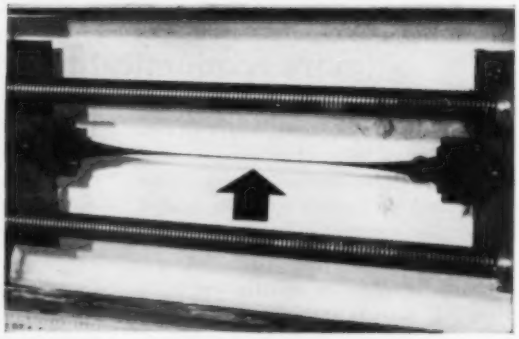
Built-Up Roofs*

Aquadam offers these important advantages:

- Superior resistance to cracking
- Superior weather resistance
- Improved self-healing properties
- Greater kettle stability
- Greater adhesion—stronger bond
- Greater resistance to water
- Excellent uniformity

Here's conclusive proof of Aquadam's greater resistance to cracking!





Top: a typical asphalt shown at average breaking point of 12 CM.

Bottom: Aquadam at a 25 CM stretch—100% beyond average—won't break even when stretched to 110 CM.

J-M Aquadam proved superior by actual test... helps provide longer roof life at no extra cost

Johns-Manville Aquadam is specifically designed to provide maximum built-up roof service for deck inclines from dead level to ½″ per foot*.

J-M Aquadam Built-Up Roofs owe their proven superiority to the newly developed bituminous asphalt cementing agent Aquadam—which is used in the application of the roofing felts.

When applied, the excellent adhesive properties of Aquadam provide a permanent bond to the felts, and to gravel or slag surfacing. Its rigidly controlled quality and excellent flow properties assure easier mopping, thorough coverage, and longer lasting roof life.

Your local Approved J-M Contractor, listed in the classified telephone directory, has complete information about Aquadam Built-Up Roofs. Or write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 565 Lakeshore Rd. East, Port Credit, Ont.

JOHNS-MANVILLE JM PRODUCTS **Johns-Manville**

Now...

MENGEL DOORS

with

MATCHING GOLD COAST CHERRY PANELS

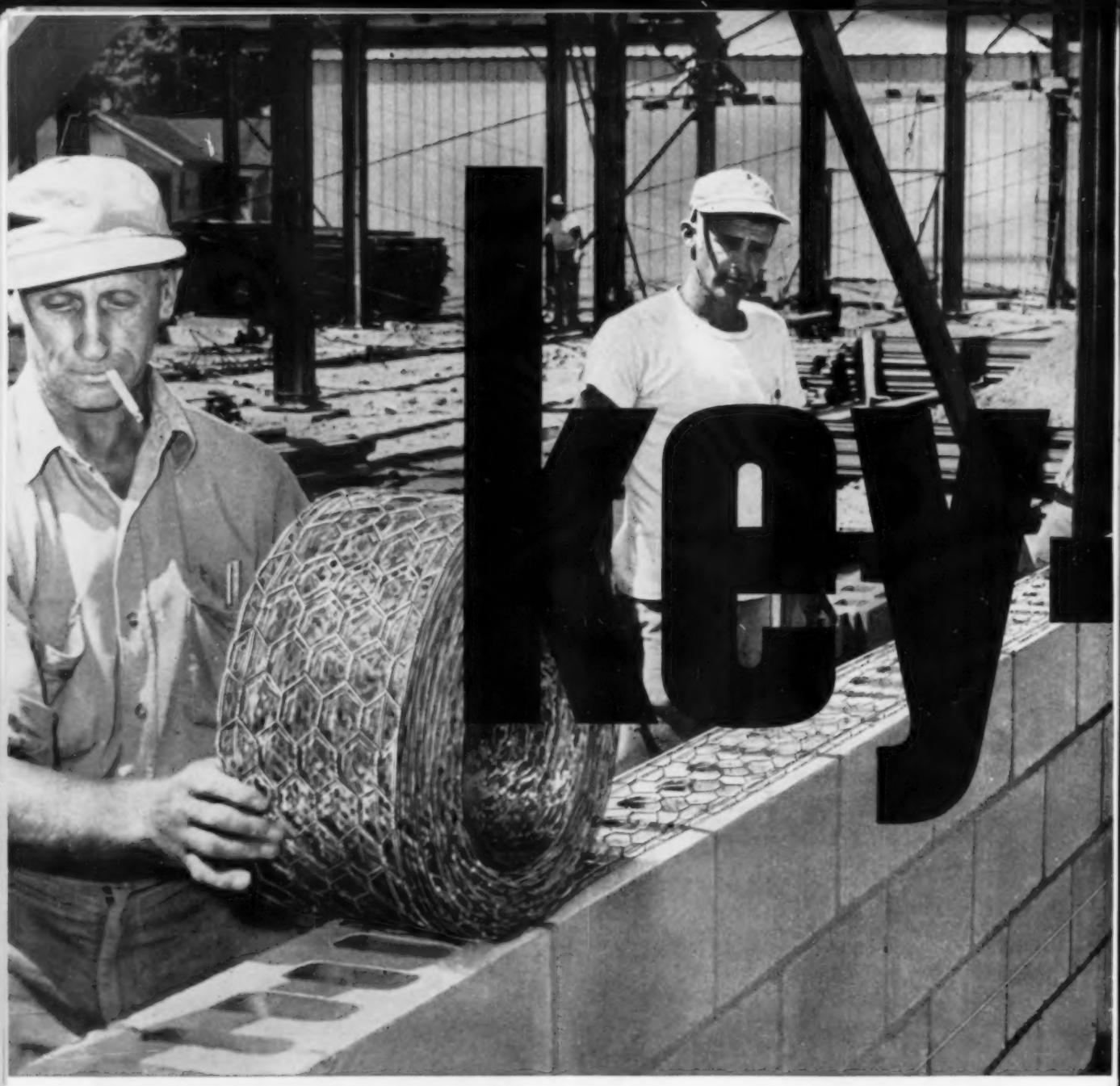
It had to happen! The tremendous response to Mengel Doors in rotary-cut Gold Coast Cherry demanded matching plywood panels.

Now they're here—satin-smooth panels with all the beauty of this exciting wood imported from Mengel's exclusive African concession—*but still priced lower than many other hardwoods!*

See for yourself—ask your dealer to show you samples.

Door Department, The Mengel Company,
Louisville 1, Kentucky.

Mengel Doors equal or exceed the requirements of Bureau of Standards specifications CS 200-55



Facts You Should Know About Masonry Reinforcement

By Edwin L. Saxer: Professor and Chairman, Civil Engineering Department, University of Toledo

For some time, there has been a growing tendency to rely on steel reinforcing in mortar joints to improve the capacity of masonry walls to resist the stresses which develop.

The usage of joint reinforcement has often proven unsuccessful in the past. The chief reason for this has been the failure to use reinforcement in more than every third or fourth joint—a practice which provides little or no benefit to the intermediate joints.

A contributing factor in many cases has been the inability of some forms of reinforcing to develop adequate bond strength.

As a result of research at the University of Toledo, and at other laboratories, the principles of effective joint reinforcement are now well understood. All indications point to the fact that reinforcement should be used in every joint, or at least in every other joint, to insure reasonable effectiveness.

Our research on the effectiveness of Key-Wall leads us to the following conclusions: (1) The design of Key-Wall results in a highly efficient distribution of steel. (2) The use of Key-Wall can reduce significantly the cracks resulting from shrinkage of the masonry; and (3) Key-Wall is effective in improving the lateral strength characteristics of masonry walls.

why it pays to specify

-wall

the new type of masonry reinforcement that gives greater value at lower cost

The effectiveness of Key-Wall has been clearly demonstrated by tests at the Research Foundation, University of Toledo.

It's being specified and used by leading architects and builders today. It will offer you advantages on any jobs you build.

Key-Wall is made for the following wall thicknesses: 4", 6", 8", 10" and 12".

- Reduces shrinkage cracks
- Adds effective lateral strength
- It's galvanized to prevent rusting . . . assures maximum bond
- Lap joints give continuous reinforcement
- Does not interfere with bedding of units
- Improves mortar joint because multi-directional reinforcement holds mortar in place; gives better bond
- Masons welcome it, because it's easy to handle; easy to cut and fit; doesn't interfere with joint thickness
- You save on material cost, as well as labor cost

FREE—SAMPLE AND TEST REPORT

KEYSTONE STEEL & WIRE COMPANY
PEORIA 7, ILL.

Please send me free sample and copy of Key-Wall masonry report made by the Research Foundation, University of Toledo.

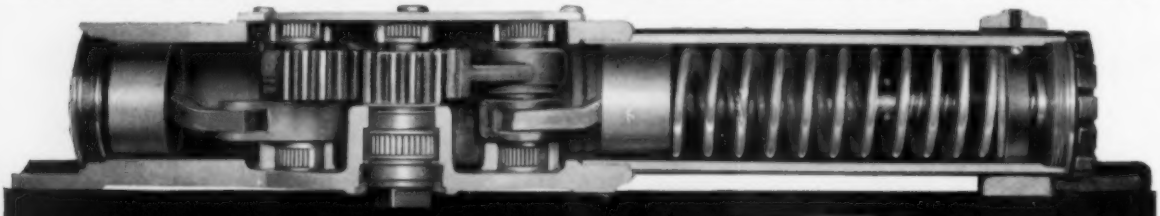
Name_____

Firm_____

Street_____

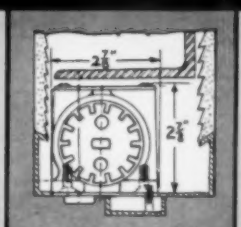
City_____ Zone_____ State_____

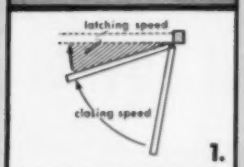
IN A TIGHT *head* JAMB?

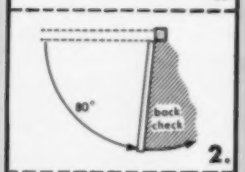


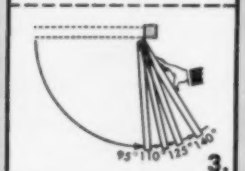
no problem with RIXSON

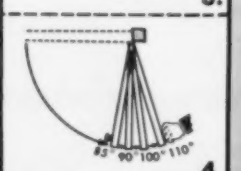
OVERHEAD concealed DOOR CLOSERS











RIXSON

fits in 3″ square with room to spare
(inside dimension of head jamb)

overall only 2⅞″ x 2⅞″ x 17″ long

The most compact of all concealed overhead door closers. Ideal for installations where modern shallow head jambs are specified.

***ALL* the controls are built-in...**

1. two closing speed adjustments
The closing speed from open to approximately 15° is controlled by one adjustment and the latch speed from 15° to closed position by another.

2. hydraulic shock absorber (back check)
At approximately 80° a hydraulic resistance starts to slow down or check the opening action of the door. Hydraulic back check optional.

3. spring cushion door stop
Door is "cushion stopped" at choice of any one of four factory-set positions 95°, 110°, 125°, or 140°. Stop removed for wider openings to 160°.

4. built-in door holder
Where specified—built-in to hold door at choice of 85°, 90°, 100°, or 110°.

Three sizes for center hung and butt hung installations.

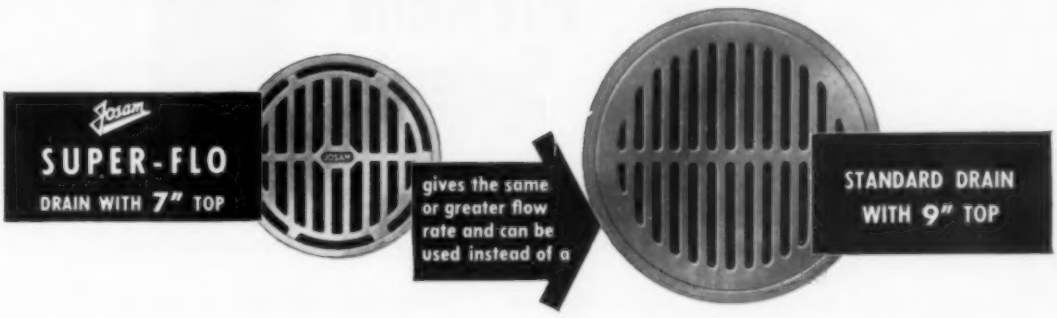
THE OSCAR C. RIXSON COMPANY
9100 west belmont avenue • franklin park, ill.

write for full details

no other drain compares with

Josam SUPER-FLO FLOOR DRAINS

for GREATER FLOW RATE • GREATER ECONOMY • GREATER SANITATION



This is the drain that is so advanced in design . . . so different from ordinary drains . . . that it is patented!

This is the drain that is making the building industry sit up and take notice because of the tremendous advantages it offers in construction economies and sanitary operation!

The Josam SUPER-FLO drain is the only drain with additional slots placed round the perimeter of the grate so that the flow rate into the drain is substantially increased over standard type floor drains.

Moreover, since waste water enters a SUPER-FLO Floor Drain at the very edge of the drain top instead of being required to flow over a wide rim in conventional drain tops before reaching the slots, friction loss is reduced and drainage (GPM) is increased.

You can therefore install a smaller size Josam SUPER-FLO drain to service the same drainage condition which generally requires a larger size standard floor drain — thereby saving money on the size and quantity of drains and improving drainage efficiency.

If you don't have complete details on the New Josam SUPER-FLO drains send coupon below at once!

GREATER SANITATION

During all drainage periods, even at a minimum head of water, the waste water enters the perimeter slots at the rim of the drain. The water, therefore, flows down over the interior surface of the drain body. This washing action on the walls of the drain body keeps the interior clear of foreign deposits.

WIDE RANGE OF TYPES AND SIZES

Josam SUPER-FLO drains are available in a wide range of sizes in either double drainage or non-clog triple drainage styles. Josam SUPER-FLO drain bodies are designed so that standard grates, extra heavy grates, sediment buckets, round or square brass tops and other features can be added or substituted after the drain body has been installed. This interchangeability of parts means time and money saved in case of alterations or change of requirements.

JOSAM MANUFACTURING COMPANY
General Offices and Manufacturing Division
MICHIGAN CITY, INDIANA
Representatives in All Principal Cities

West Coast Distributors
JOSAM PACIFIC CO.
San Francisco, Calif.

Canadian Manufacturers
JOSAM CANADA LIMITED
Toronto, Canada

JOSAM MANUFACTURING COMPANY
Dept. PA, Michigan City, Indiana
Please send manual on Super-Flo Drains

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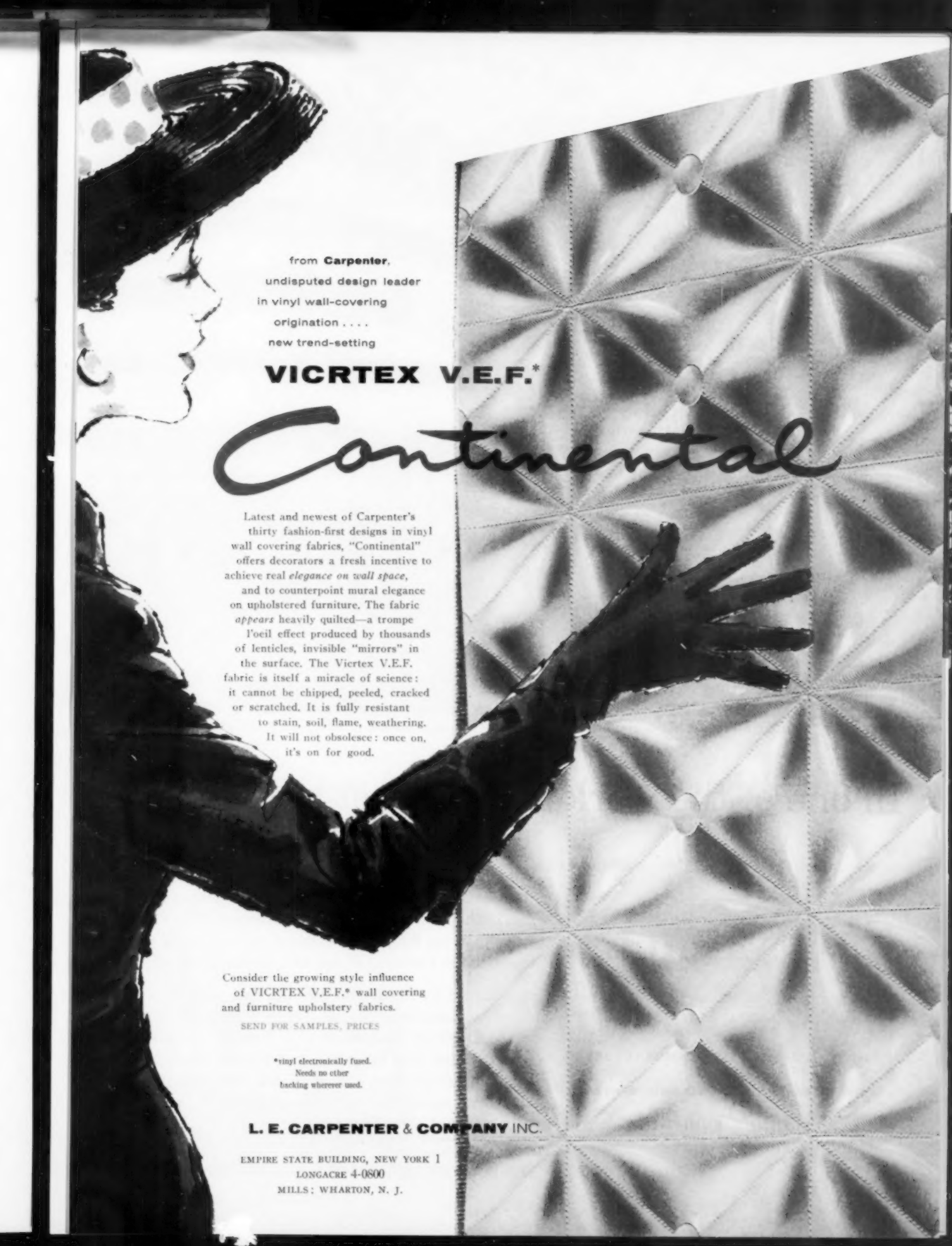

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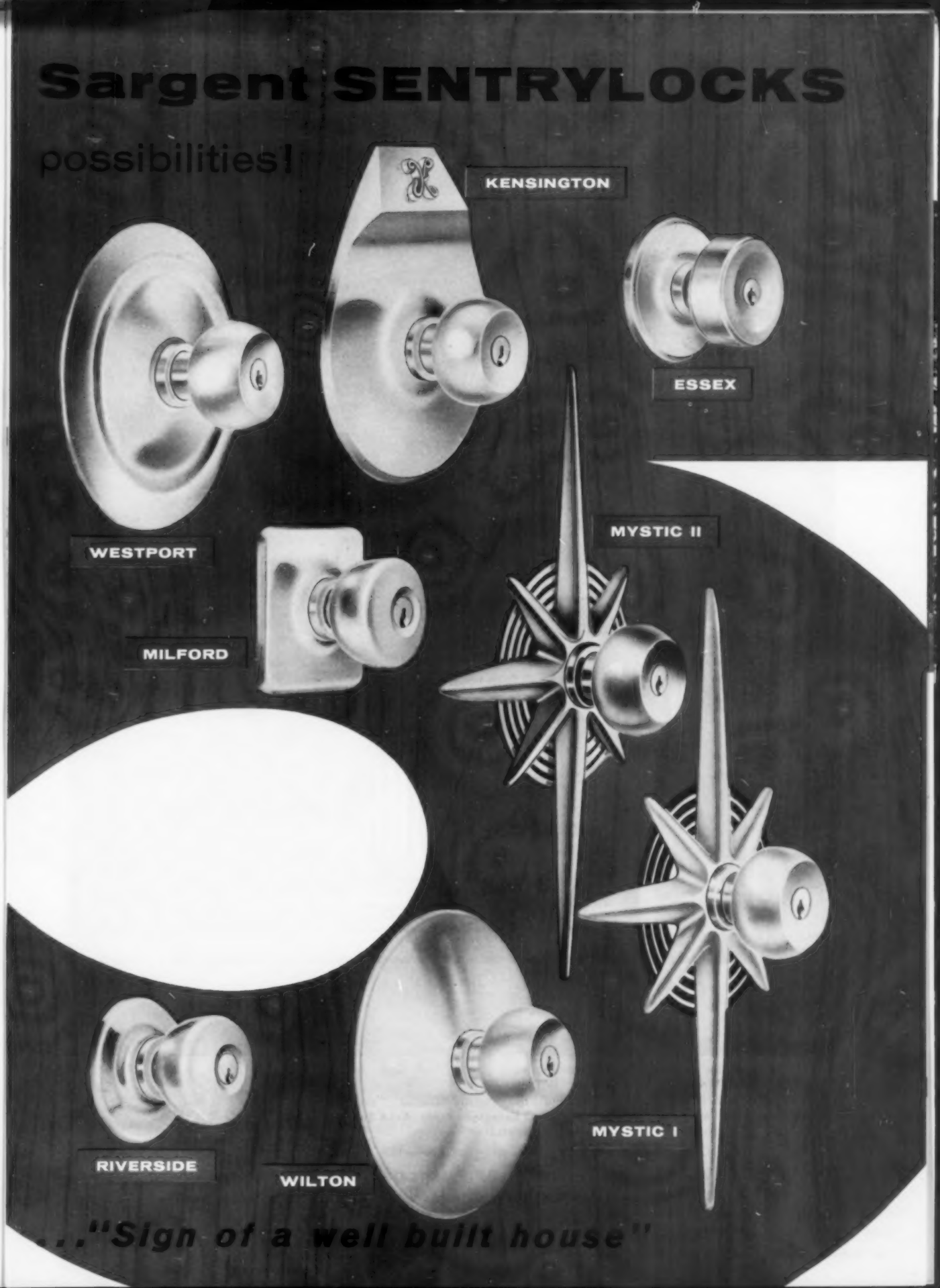
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■ **HONEYLITE**, the versatile new lighting material, was selected to cover over 40,000 square feet of ceiling area in Washington, D. C.'s National Housing Center because it met all requirements – beautifully. Made of HEXCEL aluminum honeycomb, **HONEYLITE** diffused light so efficiently and so evenly that, without first checking with a light meter, many people couldn't believe the level of illumination was as high as 75 foot candles.* The second requirement – a louverall ceiling that would not interfere with air conditioning outlets located above it – was made to order for the unique nature of **HONEYLITE**'s hollow-celled construction. For these reasons, and for more listed below, specify **HONEYLITE** for your next lighting installation – it's the most beautiful, most functional, luminous ceiling you can find anywhere!

- 45° and/or 60° light cut-off provides effective shielding
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- Weighs less than three ounces per square foot
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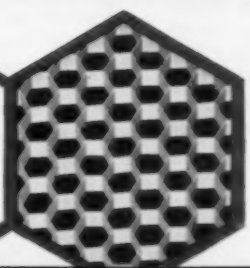
* See LIGHTING – December 1955

HONEYLITE (shown at right actual size) installation is simple, inexpensive. For full ceilings, aluminum T-bars are used to suspend **HONEYLITE** panels below lighting units. **HONEYLITE** is also ideal for use in troffers and lighting fixtures.



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COMMON IN HOUSEHOLDS, IS DEADLY TO BUILDINGS!

Huge quantities of a dangerous, invisible gas are generated by the normal daily household activities of an average American family of four; enough to condense into 76 quarts of a destructive liquid each week.

The soil under a building, especially in a crawl space, may also give up this gas at the rate of 336 quarts per week per 1000 sq. ft., when liquefied.

If this gas turns into liquid *inside* building spaces, it will foster the ROTTING of Wood, the CRUMBLING of Plaster, the PEELING of Paint, the RUST and CORROSION of Metal, even the BREAKING-DOWN of Brick, Concrete and Mortar.

This gas can also be a THIEF OF HEAT and FUEL in winter, as well as a destroyer of the building. With each pound of it that flows out of a building, there is an actual loss of 1060 Btu's of latent heat.

THERE IS A PREVENTIVE!

Aluminum has almost zero permeability to all gases, including the destructive gas of water, known as "vapor." Large quantities of vapor flow into ceiling and wall spaces, unless its path is barred. Condensation formation on or within scientific multiple aluminum insulation is minimized by the construction of multiple layers of aluminum, fiber and air spaces. Installation of this pre-fabricated material is easy. The aluminum sheets stretch with uniform depth from joist to joist*, and are a continuous vapor-barrier up to 750 ft. long, without breaks every few feet. Vapor infiltration under the flat stapled flanges is slight.

*U. S. Pat. Nos. 2,750,313; 2,314,757; 2,227,385; 2,196,006; 2,101,836.

The heat ray reflectivity of its aluminum surfaces is 97%; absorptivity and emissivity are only 3%. This is important because the flow of heat rays, or RADIATION, constitutes 50% to 93% of heat flow through building spaces (depending on direction). The multiple layers of aluminum and fiber retard CONVECTION, while CONDUCTION is slight through the low density, multiple air spaces.

National Bureau of Standards tests were made under various extreme wintry conditions with quantities of vapor, to find if condensation would form in air spaces where reflective insulation was installed below a wood floor over a crawl space. The results are reported in an interesting and informative booklet of the National Housing Agency, "Technical Bulletin #38." Just use the coupon to get a copy FREE.

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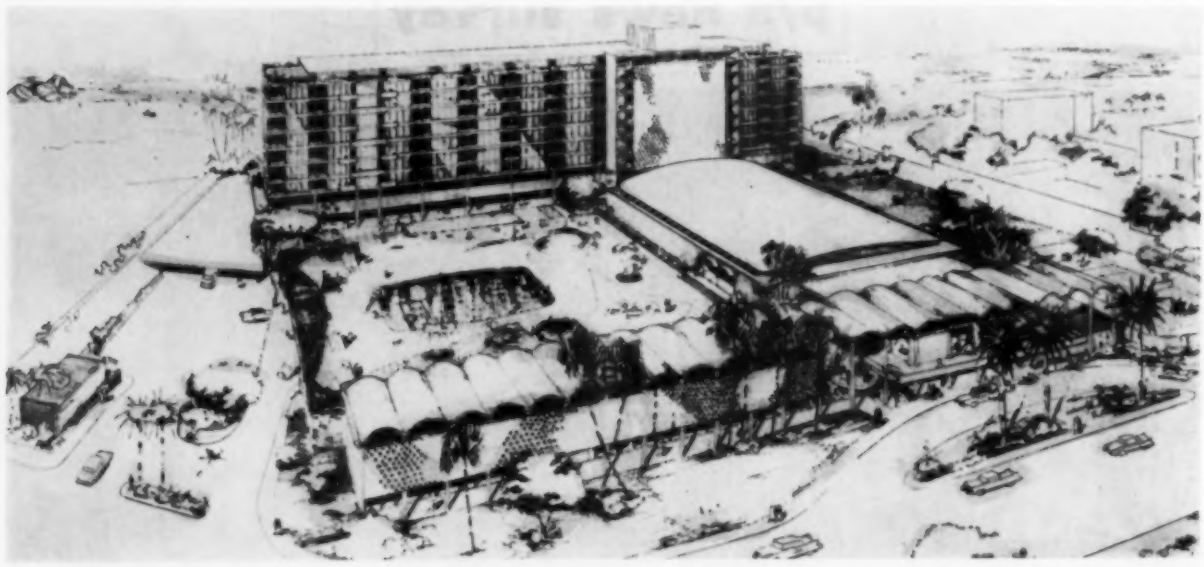
LUTHERAN BROTHERHOOD BUILDS MINNEAPOLIS HOME

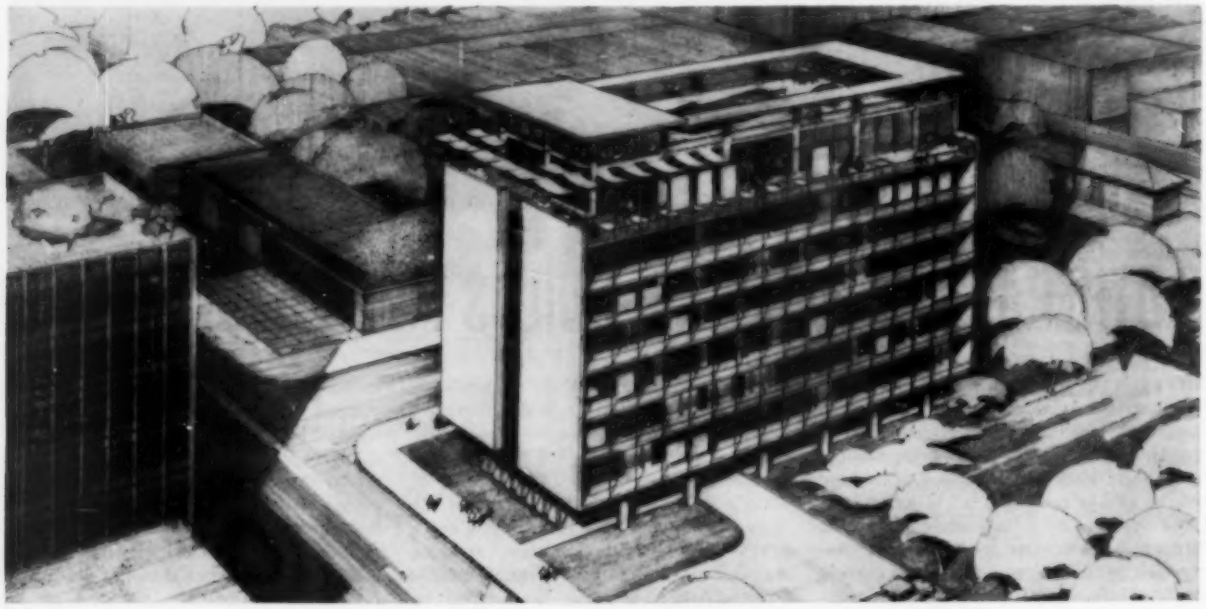
MINNEAPOLIS, MINN., Aug. 15———In designing this home office building for the Lutheran Brotherhood, fraternal life insurance and benevolent organization, Architects Perkins & Will took advantage of the site to provide a below-street-level floor bordered by a landscaped courtyard. Upper floors of the reinforced-concrete-framed building are enclosed by a curtain wall, cantilevered 5 ft beyond the structural columns, that consists of insulated, blue-green, porcelain-enameled steel panels and insulating window areas composed of an outer light of tinted, heat-absorbing glass and an inner light of plate glass. The horizontal bands of the spandrels and double-insulating glazing are broken only by narrow, snap-on, stainless-steel mullions. Cleaning of the air-conditioned building is handled by means of a trolley-like apparatus that runs on rails around the edge of the roof. Reddish-brown glazed brick surfaces the spandrel area between garden and street levels. At the garden level are a dining room, lounge, and auditorium. The street floor houses executive offices, a library, and—in a separate wing—offices of affiliated local agencies. Upper floors are for the general offices.



TWO HOTELS PLANNED FOR MOTOR AGE

A welcome trend in hotel design—inclusion of underground parking space—is illustrated in the two new hotels shown here. One is in Puerto Rico, the other in Colorado. The La Concha Hotel (*above*) is being built on San Juan's Condado Beach. To minimize building height, steel columns with shear plates and flat concrete slabs have been designed for the two, below-grade parking levels. Superstructure is reinforced concrete, using bearing partitions on 28-ft centers with longitudinal-beam bands for earthquake safety. The hotel will offer such resort amenities as a swimming pool; cabanas; ballroom; shopping arcade; and beach-side dining terrace shaded by a giant concrete "seashell." It was designed for the Puerto Rico Industrial Development Company by Architects Toro & Ferrer, Puerto Rico, and Charles H. Warner, Jr., New York.

The Bison Motor Hotel (*below*) scheduled for construction in Boulder, Colorado, by the Boulder Acceptance Corporation, was designed by Architect James M. Hunter. In this scheme, the entire building is raised on stilts for maximum ground-level entrance of cars, and ramps lead down to an underground parking level. Otherwise, the first floor contains only a few small shops and an elevator lobby, with clerk's desk and space for bellhops. Guests drive right under the hotel, and their cars are taken down to the parking level. All except the two top floors are guest rooms, the concrete shell and cantilever system being so devised that all rooms have a small balcony. On the top floor is the hotel lobby and swimming pool; dining rooms occur on the floor below.



PERMANENT HOME RESEARCH CENTER LAUNCHED

GRAND RAPIDS, MICH., Aug. 20———The Homestyle Center, a project of the Home Research Foundation, Inc., and co-sponsored by civic groups and the National Association of Home Builders, has started construction of a housing-research village on an 80-acre site in Grand Rapids, Michigan. Eventually to include 50 houses, the project will be a permanent display and research center aimed at raising the level of home design, construction, furnishing, and equipment. Once the village is completed, present plans are to replace from 5 to 10 of the houses annually with new ones.

Of the initial 25 houses to be built, 17 are the work of the following Architects: Robert Little **(1)**; Wurster, Bernardi & Emmons **(2)**; Kazumi Adachi **(3)**; Ralph Rapson **(4)**; John E. Dinwiddie; Alden Dow; R. Buckminster Fuller; Harwell H. Harris; Jones & Emmons; George Nelson; Eliot Noyes; Painter, Weeks & McCarty; Paul Rudolph; University of Illinois; Royal Barry Wills; Clifford D. Wright; and Gene Zema.

Included on the design teams are Interior Designers Norman Hansen, Eleanor Whaley, Margaret Sedwick, Harry Saunders, Garth Andrew, Eszter Haraszty, Hugh Smallens, James Cleveland, Meg Torbert, Phillip Hall, Benjamin Cook, Henry Demant, Knorr Interior Planning, Inc., and Walt L. Kerr. Also, Landscape Architects Francis Dean, Robert Wreich, Edward Laird, Richard Myrick, Garrett Eckbo, Henry Pree, James Rose, Even Harding, John Scruggs, E. J. Phelps, Fredric Stresau, Olmsted Brothers, H. F. Klein, Lawrence Halprin, and William G. Teufel.

In addition to these team-designed homes all of which will be open to the public for a small admittance charge, there will be a purely experimental project; a builder house; prefabricated houses; a remodeled house; and a house imported from Europe. Homestyle Center's Design and Standards Committee that selects the design teams and passes on the designs and materials to be used consists of Pietro Belluschi, L. Morgan Yost, Kenneth C. Welch, Rodney M. Lockwood, David C. Slipher, Martin L. Bartling, Sidney N. Shurcliff, James P. Erdman, and Arleigh C. Hitchcock.

Adjacent to the home-display area, there will be a research center for study and field testing that will have facilities for testing materials, structural methods, equipment, and appliances. Information developed at this research center will be distributed to architects, interior designers, landscape architects, industrial designers, builders, and the manufacturers and suppliers of building products.

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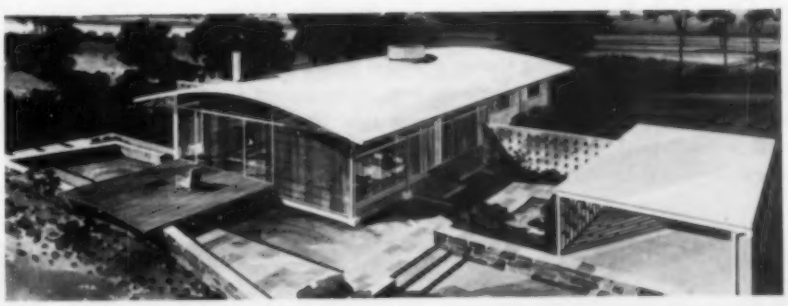

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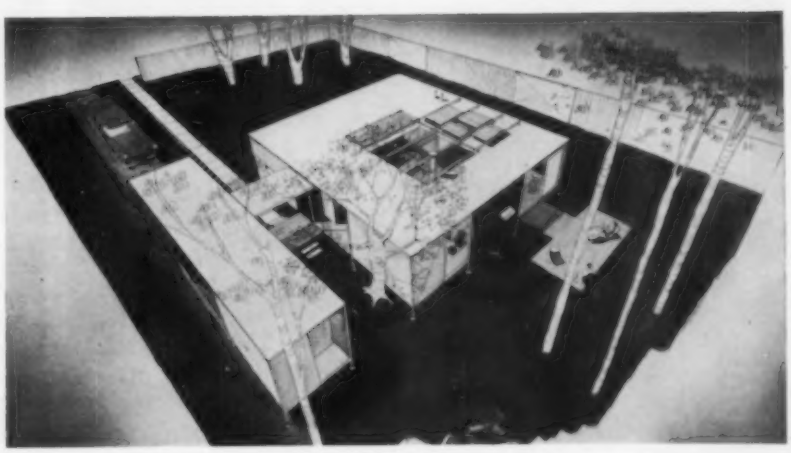

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News Bulletins

• In New York, Mayor Wagner appointed three nonsalaried members to newly created Brooklyn Sports Center Authority. These are: Charles J. Mylod, President of Goelet Estates Co.; Robert E. Blum, Vice-President of Abraham & Straus department store; Chester A. Allen, President of Kings County Trust Co. Latest estimate of cost for redeveloping Brooklyn downtown area, including construction of Dodger Stadium, is set at $250 millions (see also NEWS SURVEY November 1955 P/A). . . . Port of New York Authority is building $320,000 commercial helicopter base on 400-ft strip along the Hudson River. First pile was driven July 10 and project, consisting of two 160-sq-ft concrete landing pads and 100-sq-ft inshore mooring space, will be completed this September.

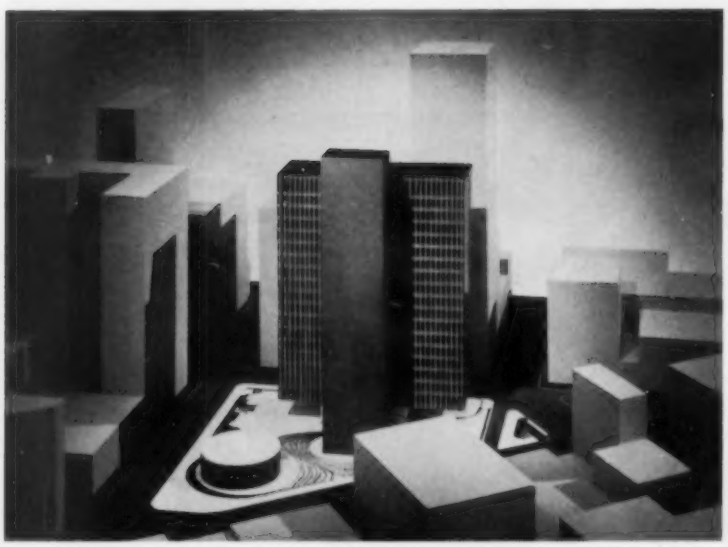
• Members of architectural woodwork industry and suppliers are invited to attend 4th annual Convention of Architectural Woodwork Institute at La Salle Hotel, Chicago, Oct. 18-19, occurring simultaneously with Chicago convention of National Lumber Association. . . . Reynolds Metals Company, aluminum pioneer, and E. F. Hauserman Company, manufacturer of movable interior walls, have collaborated to produce a new line of lightweight-aluminum movable partitions for commercial or institutional interiors. . . . Noise Abatement Symposium in Chicago, Oct. 11-12, will deal with legal problems of industrial hearing loss; control of environmental noise generated by machinery.

• Demolition to clear site for 20-story headquarters building of Crown-Zellerbach Corporation in San Francisco began in mid-July. Designed by Skidmore, Owings & Merrill and Hertzka & Knowles, building shown in model (below left and right) will be enveloped in aluminum and glass, except for concrete utility core projecting from one side. Steel frame and eight-ft-thick concrete-mat foundation 30 ft below street level will be engineered to resist earth tremors. Surrounding area (⅔ of site) will feature reflecting pool, gardens, and walkways open to public.

• Beaux Arts Institute of Design, now diverging in principles and activities from its namesake, recently adopted new title, "National Institute for Architectural Education" and outlines an expanded program to aid architectural students; to encourage balanced curriculum of high standards; to facilitate exchange of ideas and information among students.

• ACTION—American Council to Improve Our Neighborhoods—recently announced 1956 campaign has been extended to cover neighborhood and urban redevelopment; whereas 1955 campaign—the first—was concerned primarily with housing conditions. . . . "Man of Action," 3½ minute, full-color, 16mm film loaned free for showing before civic groups has been contributed by Continental Can Co. For details write: ACTION, Box 462, Radio City Station, New York 20, N. Y.

• American Academy in Rome has several fellowships available to artists and students showing ability to do independent work in historical research, art, or architecture, for one year beginning Oct. 1, 1957. Work submitted in prescribed form and applications are due Dec. 31, 1956. For details write: Executive Secretary, American Academy in Rome, 101 Park Ave., New York 17, N. Y. . . . "The City and Its Surroundings," was theme of 23rd Congress of International Federation for Housing and Town Planning held in Vienna, July 22-28. International Challenge Cup for films was won by the University of Pennsylvania. Meeting of 25th Congress will occur in Puerto Rico, 1960—first one in western hemisphere since 1938. . . . Georgia Tech exhibit, "A Half Century of Architectural Education," was chosen by Chamber of Commerce to appear at International Trade Fair in Zagreb, Yugoslavia, Sept. 7-20, 1956. Exhibit, showing buildings designed by alumni, includes American Bank and Trust Co. Bldg., Philadelphia, by W. Pope Barney and Roy W. Banwell; proposed solution for Berlin Conference Hall, Germany, by Hugh Stubbins & Associates (see also NEWS SURVEY, September 1955 P/A).



Photos: Morely Baer

• Two hundred aviation cadets participated in dedication of "International Flight Mall" at Roosevelt Field Center on Long Island, N. Y. Former airport is currently being developed by Webb & Knapp into a community business and social center. Latest reports announce: ice-skating rink 85'x100' will open in November; 110-store shopping center will open Aug. 29; industrial center has eight plants in operation; office-building center is under construction; parking facilities will accommodate 11,000 cars; new Meadowbrook Parkway with two cloverleaf interchanges entering parking areas will soon be initiated (see also September 1955 P/A).

• First exhibition of architecture in National Gallery of Art, opening May 14, 1957, will coincide with AIA centennial. Under direction of Frederick Gutheim, exhibition will feature large color transparencies stressing characteristics of contemporary work portending future directions (see also NEWS BULLETINS May 1956 P/A). . . . American Society of Civil Engineers will hold first commercial exhibition as part of annual convention at Hotel Statler, N. Y., Oct. 14-18, 1957.

• Tile Council of America, Inc., venturing into academic field has prepared new scholarship program for architectural students in third, fourth, or fifth year of any recognized school of architecture in U. S. Write: Tile Council of America, Inc., 10 E. 40 St., N. Y. 16, N. Y.

• Small atomic reactor intended for display at 1958 International Exhibition, Brussels, was barred from fair by Belgium Government to pacify disquieted citizens protesting on health grounds. Exhibition site of nearly 500 acres divided into Belgian, Foreign, and International Sections involves huge planning problems. Tunnels for suburban trams, roads, aerial bridge, and monumental exhibition halls are scheduled for construction. One principal attraction is 360-ft-high Atomium composed of nine 59-ft-diameter steel spheres and connecting tubes—a symbolical crystal form—sheltering scientific exhibition of Belgian Metal Industries.

• American exhibit at International Trade Fair in Damascus, Syria, Sept. 1-30, will be housed in building designed by Raymond Loewy Corporation (above). Dominating exhibit expected to cover 24,000 sq ft will be a 40-ft-high pavilion formed of five intersecting parabolic arches that enclose circular stage and TV studio. Walls of white cement block, pierced concrete, and 60-ft section of highly polished marble give textural variety. White-metal vertical-framing members of elevation set on 24-ft module accent central canopy. Displays will emphasize role of technology in American life.

• Stained Glass Association of America recently announced winners of 1956 Apprenticeship Competition in Boston. First-Prize panel, "The Magi," by Donald Erik Erikson, Cleveland, depicts awe-struck Magi recognizing Child Jesus (below left); Alfred McArdle, Philadelphia, won Second Prize with slab glass in concrete panel showing symbolical dove and ruby chalice to represent "Descent of the Holy Spirit at Communion" (below right). Honorable Mentions went to: Robert Anderson, "Head of St. Paul," and Robert Johnson, "Nativity," both of Milwaukee, Wis.; and Richard Millard, "Hypocrisy," of New York.

Washington Report

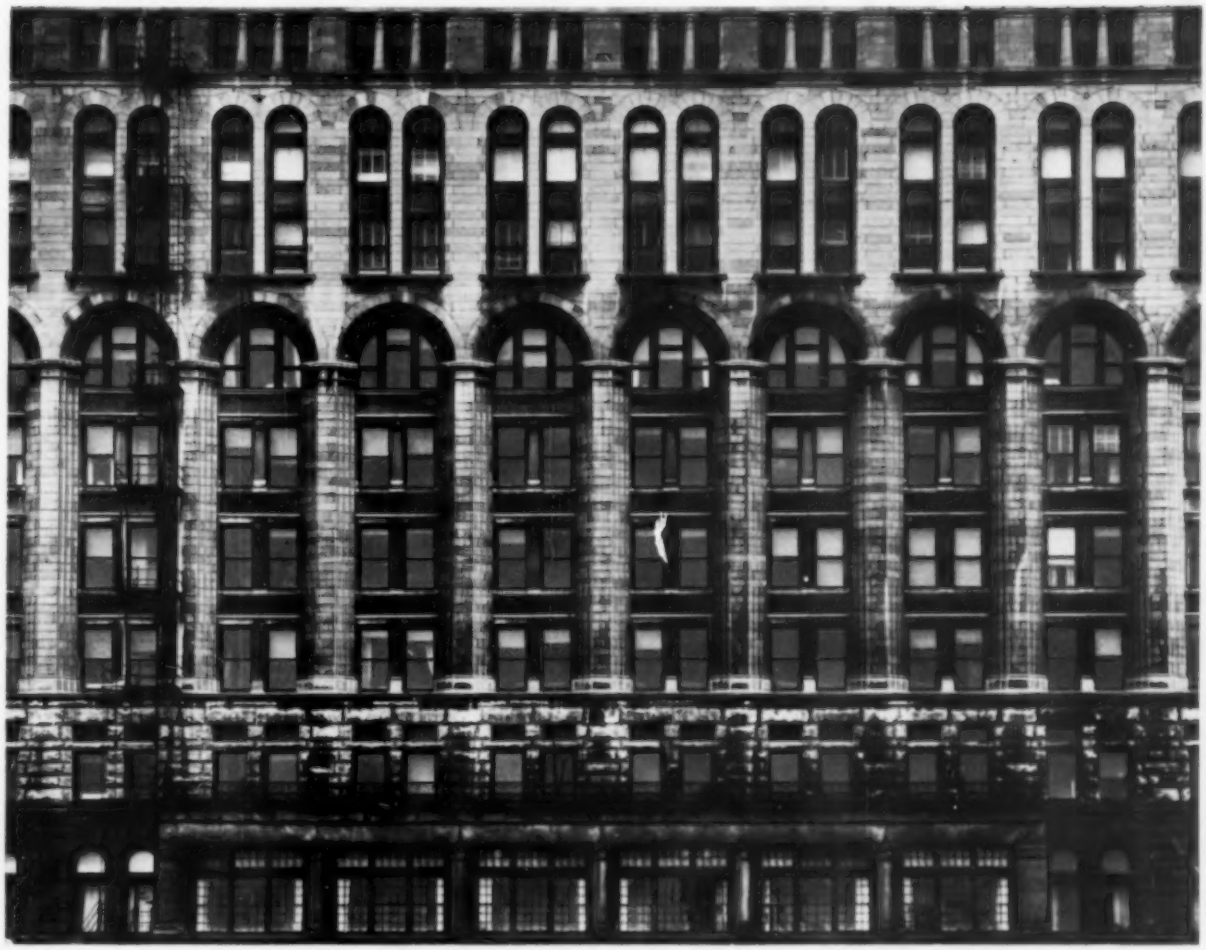
by Frederick Gutheim

The closing days of the session brought Congressional action on several programs of interest to architects. Of greatest importance were the enactment of new housing programs and initiation of a substantial program of Federal aid for health research. The failure to enact any program of Federal aid for school building is the greatest omission in the Congressional record, although many architects will also feel that what has been done in health and housing is far short of what is needed or desirable. The housing law enacted was precisely that recommended by the Administration, and represents another victory for Housing Administrator Albert M. Cole. It is strictly a middle-of-the-road program, attacked equally as too much or too little. That it was enacted at all—in a typical photo-finish—is remarkable. The bill actually provides for substantial measures liberalizing the FHA program, and a public-housing program of 35,000 dwellings in each of the next two years. While it holds the line fairly well as an economic measure, it does open the way to considerable experimentation in such areas as co-operative housing and housing for elderly persons. A considerable expansion of the highly successful college-housing program will result from the increase in the revolving loan fund from $500 millions to $750 millions, and the decision to hold interest rates in this program at their present levels. Among the changes in FHA provisions were steps to liberalize home modernization and the purchase of existing houses.

In other legislation enacted earlier this year, Congress opened a new phase of military housing by permitting insurance of mortgages on houses owned by essential civilian employes of the Armed Forces. It is also worth recording that while far from a genuine research program, the "testing" program Congress has authorized FHA to undertake will be of some help in overcoming the vagaries of existing MPR's. Taken in all, it is hard to disagree with Senator Sparkman's final estimate of the housing bill as given in the Congressional Record for July 27. Indeed, his retort to Senator Lehman leaves little doubt that housing has been taken out of the Presidential campaign as a partisan issue.

The President's signature on a $90-millions program of Federal grants-in-aid for medical-research facilities starts his program to improve the "wholesale" aspects of medical care—a step which many progressive Republicans see as the practical alternative to improving the "retail" aspects via some Federal program of socialized medicine. In a measure, the program follows the steps of the Hill-Burton hospital-construction act. While far short of the $250-millions program urged by the Department of Health, Education, and Welfare, the currently approved program of research facilities should be followed in another year by similar authorization to finance medical-education buildings.

• The American Battle Monuments Commission last month dedicated cemeteries designed by American architects and artists in Cambridge, England; St. Laurent, St. James, Epinal, and Draguignan, France; and Nettuno, Italy. While I am familiar with the program through drawings of these projects, I must confess to the shocking reality of the experience of visiting Nettuno a day or so before the dedication ceremony. Designed by Eric Gugler, with sculpture by Paul Manship, it is like the work of another century rather than a thing of our own generation. But apart from this design characteristic, which is shared by the other military cemeteries, the Nettuno memorial chapel struck me as almost vulgar. Nothing about it seems sincere or direct. In the cemetery, the thousands of white marble crosses are of an unreal whiteness and uniformity, and designed to curve slightly to appear less brutal—an effect denied by their machinelike uniformity. Similarly, the cemetery is laid out in gentle curves which somehow only make the graves seem more numerous and the effect no less regimented. The turf and the gardens, made possible in this dry area only by an obtrusive irrigation system, have the lushness of funeral flowers. The chapel itself is a little, symmetrical temple in marble and travertine. The central court holds Manship's sugary statue of two idealized servicemen, stripped to the waist, gazing vacantly into space. To either side are a chapel, the walls of which are covered with the names of 7862 servicemen buried here and 3000 missing in action, and a memorial hall, with maps tracing the campaigns from Sicily to Rome in which they died. The front of the chapel is dominated by two more of Manship's large figures, mounted on the marble walls: angels, this time, on clouds as substantial as loaves of bread. The great, fat columns holding up nothing somehow summed up this contradiction of material richness and spiritual poverty. It is certainly a fact, I thought, driving back to Rome, that we Americans don't know what to do about death, and the Nettuno cemetery (which at home might be more tolerable) in Italy uncomfortably reminds one of a gangster funeral. So I stopped at Fosse Ardeatino, where are buried some 300 Italian partisans slaughtered by Nazi troops in the caves where they were hiding. Here I found what is lacking at Nettuno—an idea. The details of design, from the oleanders to the arbitrary masonry, are hardly different. But hardly any part of this remarkable cemetery fails to make its contribution to memorialize this atrocity. What is squeezed dry at Nettuno is the glory and the sacrifice, the valor and the tragedy, of those buried here. These qualities are not to be commemorated in vapid sculptural forms and architectural richness and refinement. The cemetery at Nettuno, and I fear the others, too, are artistic failures not far short of a national disgrace.



Authenticated News

LOUIS HENRI SULLIVAN CENTENARY

CHICAGO, ILL., *Aug. 18—"Louis Sullivan and the Architecture of Free Enterprise" will be the title of a special exhibition to be held at the Art Institute of Chicago, October 25-December 2, commemorating the 100th anniversary of the birth of Louis Henri Sullivan—master of the "Chicago School." Huge photographs, large-scale images projected in color, actual samples of Sullivan's rich ornament, and original sketches will recall the architect's work—grouped according to the following themes: 1. Sullivan's Significance Today; 2. Formative Years; 3. Adler & Sullivan; 4. Sullivan Alone; 5. Sullivan's Ornament. Edgar Kaufmann, Jr. has been appointed to direct this major architectural exhibit for the Art Institute; Daniel Brenner, Chicago Architect, will design the installation; John Szarkowski (whose handsome book of contemporary photographs of Sullivan's structures, "The Idea of Louis Sullivan," will be published next month by University of Minnesota Press) is the Photographic Supervisor.*

Representative of Sullivan's work are the Auditorium Building (above), *Chicago; and the detail of the original entrance of the Wainwright Building* (left), *St. Louis, Missouri.*

Financial News

by William Hurd Hillyer

Only the fourth quarter now remains of a year that from the outset defied forebodings. By any proper prognostic, it should have brought violent readjustments which, because of the basic economic position that the architect enjoys, might have wrought curtailment of his practice. Instead, as intimated in our column for May 1956 P/A, this has so far proved "a Santa Claus year" to the generality of business and construction. In the residential realm, where the greatest fears of recession were entertained, the surprise has been pleasant. As reported by a New England mortgage news authority, there has been a steady absorption of new houses—"a demand which will unquestionably last for some years"—and this upgraded condition extends into the area of comparatively small and inexpensive dwellings.

The nation's output of goods and services, on which the building market directly depends, has continued to move upward during the past six months, reports the Federal Reserve Bank of Chicago. Though much of this gain reflects a price uptrend, total U.S. output's record $409 billions annual rate in the April-June quarter was $6½ billions above year-end figure. This new high, says the bank, represents a rise of $51 billions, or 14%, from the early '54 low. However, the Chicago Federal Reserve sees divergent drift nationwide, thus creating substantially different patterns. Milwaukee, for example, predominantly a "hard goods" producer, is outpacing most other large cities as to employment and consumer spending. From this it would seem that the accent is still on "durables"—a healthy state of affairs from the architect's standpoint.

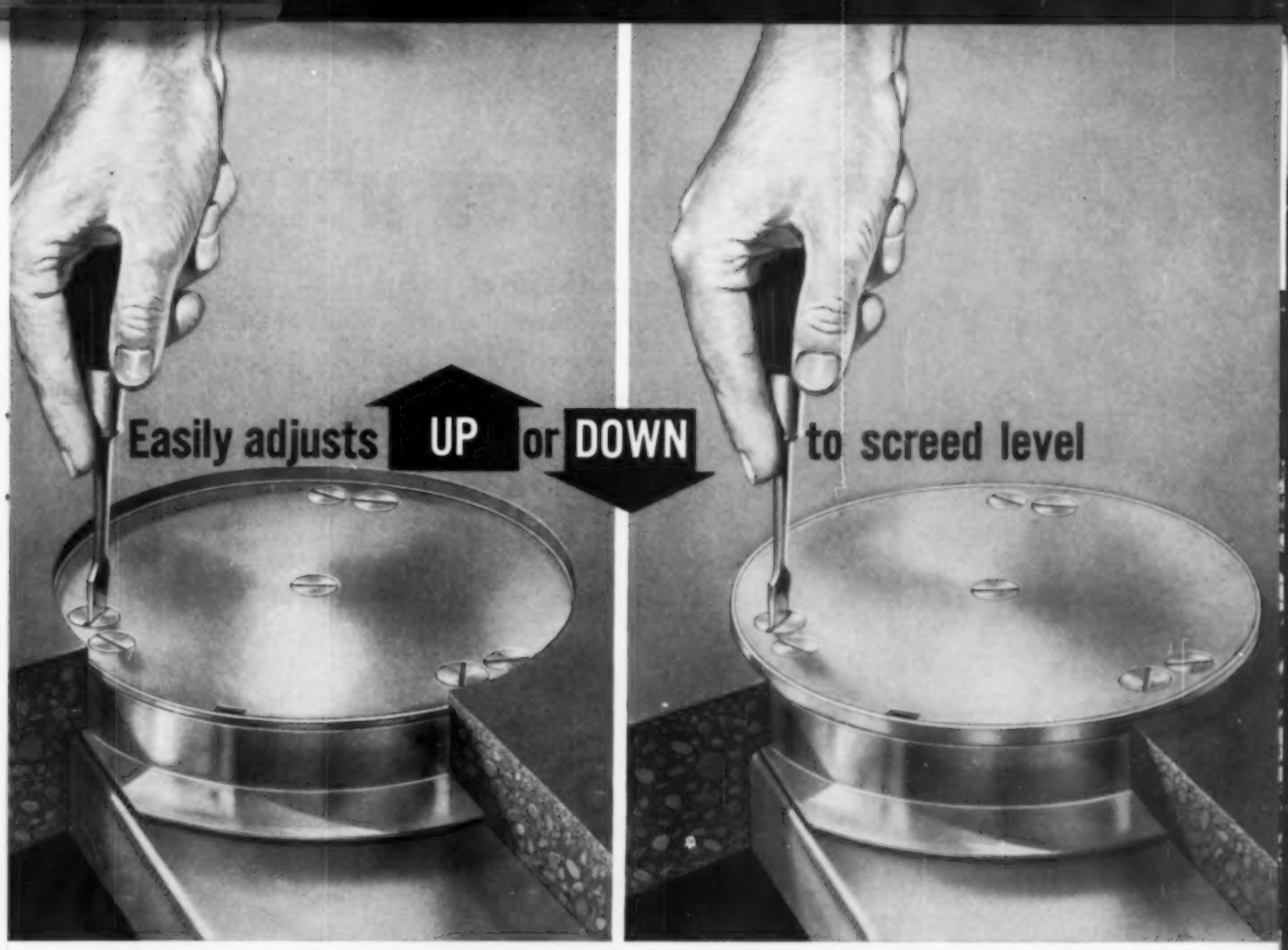
• Tight money continues to influence both long- and short-term credit policies—the "product of pressure for funds in a boom year," seen by The First National City Bank of New York. That institution believes that the Federal Reserve Board's loosening of restraint during recent weeks has doubtless been influenced by a slackened expansion of mortgage and instalment credit, by the leveling course of industrial production, and by expectation that business concerns would borrow more money to carry out their expansion programs. In addition, the corporations were faced with a speeded-up tax schedule that in fact did deplete their cash. These several factors pulled down their corporate cash holdings some $1.5 billions and Federal bond portfolios about $2.1 billions, at a time when business customarily builds up reserves to take care of the fall. This situation is now righting itself, but meanwhile the business corporations have borrowed $1 billion more from the banks. Chances for normally loose money are slender during remainder of '56.

Indirectly beneficial to architects will be the new rule for "Fannie Mae" (Federal National Mortgage Association), designed to increase mortgage-buying abilities. Her function is to buy Federally guaranteed mortgages when offered for resale. Heretofore, the seller has been required to purchase stock in "Fannie Mae" equal to 3% of the mortgages' face values. This will be reduced to 2%, insiders predict, as soon as the revised housing bill is signed by the President.

Bankers throughout the country will soon be living in glass houses, literally as well as figuratively, if nationwide trend continues. Latest among contenders for the crystal cup is the Bellevue branch of the Washington State Bank (Snoqualamie, Wash.) The new structure is walled on three sides with tinted double glass. An arresting feature of the design is the aquarium effect, produced by broad vertical panels with no frame at the top. Inside, ceiling-to-floor draperies of glass fiber achieve heat, light, and sound control. From the opposite end of the time-scale comes Atlanta's C&S National Bank Pioneer Post, temporary Howell Mill Road branch of the Citizens & Southern. A log cabin of the authentic 1833 Marthasville style, the edifice is provided with false-front second story and its interior is lit from wagon-wheel chandeliers. This already popular counting house betokens perhaps a nostalgic trend while preserving whatever is soundest in modern design and equipment.

• The banker's stake in urban development is appraised in the American Bankers Association's magazine for August, particularly as to branch bank location. The point is made that haphazard growth has bestowed upon the average urban area a heritage of decay, overcrowding, and "chronic municipal financial difficulties." Such deteriorating influences, it is stated, have been the largest contributing causes of the hegira to the suburbs. Involved are not only people, but also business, industry, and architects' practice. In this shuffle, urban centers—including banks—lose custom with untoward effects. Drive-in banking and merchandizing, slum clearance, and improved housing, may afford partial solutions to the problem. In any event, it would seem that here is an opportuntiy for the local architect to collaborate with civil and financial bodies, producing mutually good results without impairment of professional dignity.

• Settlement of the steel strike has released fresh energies in the nation's economy. Among these are consumer buying, which should take a fresh spurt "stemming from wage increases." In addition, government programs (particularly schools) will move forward. Meanwhile, private industry seems to exhibit great underlying strength and the economic situation, says The Chase Manhattan Bank, "shows no disposition to cut back capital expenditure plans. . . ." Consequently, it would seem that the next note may well be struck from "the gong of inflation." If so, national economic policy, that institution believes, will again face the dilemma of "containing" inflationary pressures without interfering with normal growth of production and employment. The recent upsurge in bank loans (2½ times the 1946 total) is regarded as in line with the broad sweep of normal banking trends in commercial and industrial categories, besides reflecting a healthy growth in real estate financing.



New adjustable header duct junction units assure a level finished floor

National Electric has developed an easily adjustable junction unit ring for its Header Duct Steel Underfloor Raceways.

The new Header Duct junction unit ring is designed to eliminate the raised spots and depressions that occur when underfloor raceway junction boxes protrude above or become recessed in the floor due to minor variations in the level of the concrete. Adjustment of three easily accessible recessed screws in the cover of the unit is all that's required to level the ring with the concrete surface . . . assures a smooth, level, attractive finished floor.

National Electric junction unit rings can be moved *down* as well as up after the concrete has set. A galvanized steel collar around the junction unit ring keeps concrete from bonding to the ring and preventing a downward adjustment.

This newest Header Duct improvement is typical of how every detail in NE Header Duct is engineered to help you give the owner complete flexible electrical distribution for power, light, communication or telephone—where and when it's needed.

If you're planning for cellular steel floors make sure you include Header Duct—the all-steel grounded feeder raceway from distribution panel to the raceways formed by the cellular steel floor panel.

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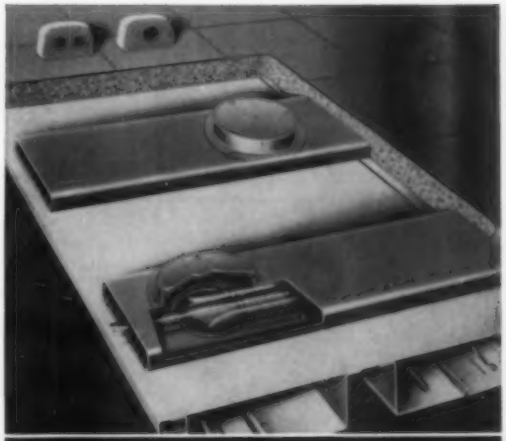


Where you plan cellular steel floors with underfloor electrical distribution always specify

HEADER DUCT

OVERHEAD DOOR HOLDERS

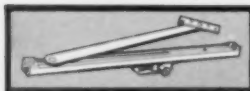
provide a cushioned stop . . .

that absorbs the shock of violent openings, avoids damage to glass, jamb, door, wall, hinges and other hardware and cuts down maintenance and repair costs.

hold the door open . . .

during heavy traffic—at school dismissal, factory or office "quitting" time or when the theatre lets out. Heavy wear and tear of continuous opening and closing of the door is avoided.

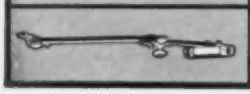
Wide choice of styles to meet varying budget and installation requirements.



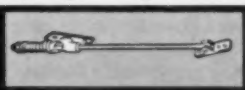
GJ 100 • 200 concealed in top rail of door. Finest for exterior and interior doors.

GJ 90 the outstanding surface type. For exterior and interior doors.

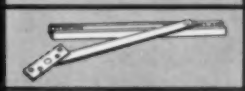
GJ ARISTOCRAT. Most "practical" for hard usage.



GJ 80 good quality for moderate cost installations.



GJ 70 for low cost installations.



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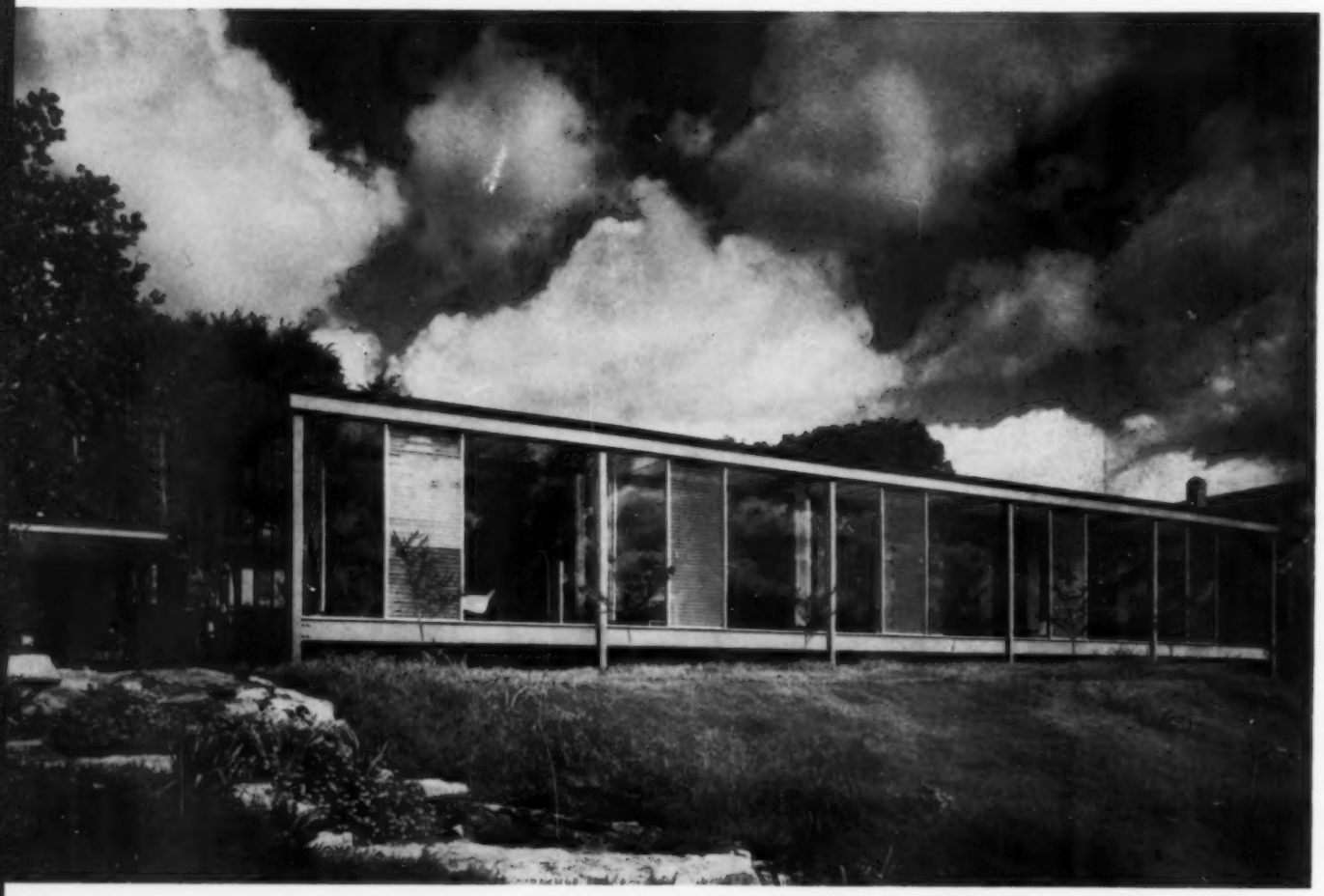
parish library

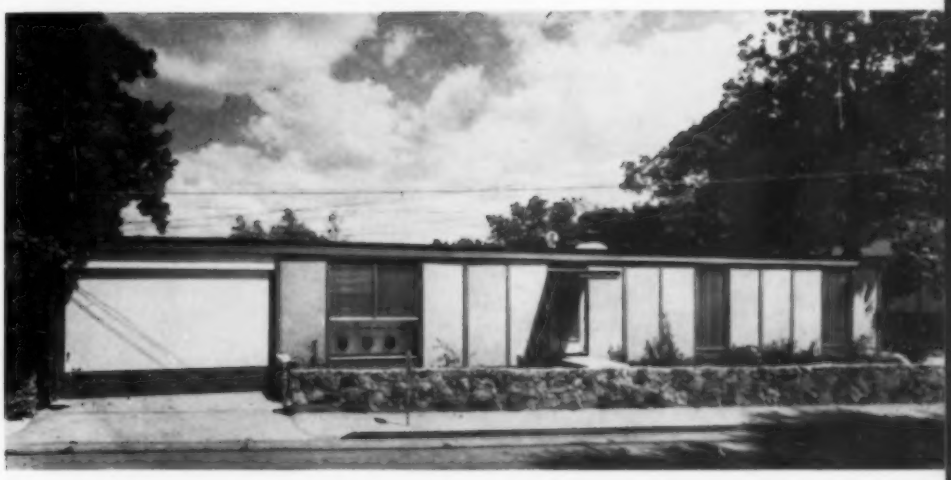
location | Natchitoches, Louisiana
architects | Barron, Heinberg & Brocato

parish library



"The first reaction to a contemporary public building in this Southern community, steeped in history and tradition, ranged from heated disapproval to enthusiastic support. After the building was occupied, acceptance seemed to be widespread and public use of the library facilities showed a marked increase. The library staff reports that the building functions smoothly and are pleased to note numerous compliments from visitors. A small group of public-spirited citizens, headed by members of the library board, have taken charge of landscaping the site and providing certain furnishings. Their enthusiasm and cooperation were largely responsible for the generally satisfactory end result."

BARRON, HEINBERG & BROCATO



This parish library is situated in the oldest city of the Louisiana Purchase and has as neighbors many fine antebellum buildings. It is bordered on one side by a busy thoroughfare. Opposite, a scenic lake provides the quiet and relaxing atmosphere so desirable for a library setting. For the benefit of those using the library, it seemed logical to face the reading room (*acrosspage*) toward this pleasant prospect. A garage for the book mobile unit—a very important function of this library—was accommodated on the street side (*above*), together with an extra large workroom made necessary by the popularity of the mobile unit. For supervision of the library by a staff often limited to one person, it was imperative to place the control desk centrally. With these space allocations, a side entrance (*below* and *opening page*) suggested itself. Since erosion along the banks of the lake made surface soil unstable, the building—a steel frame—was raised off the round onto reinforced-concrete floor joists. "The visual continuity of the steel structure," explain the architects, "is the most salient architectural expression of the building. Hence the exterior walls—marble panels backed with insulation and plaster—were designed to leave the columns exposed inside and out. Interior partitions are similarly disposed. The roof is a poured-gypsum deck which leaves the roof framing exposed within." Others who contributed to the success of this noteworthy little building are: Leroy A. Staples, Structural Engineer; deLaureal & Moses, Mechanical-Electrical Engineers; Leon Roy, General Contractor.

parish library

At window wall of stack-and-reading room (above, *also* SELECTED DETAIL) *clear glass panels alternate with glass-jalousie panels. Acoustical board, used throughout the building, also served as formboard for the poured-gypsum roof deck. Flooring is asphalt tile. General illumination is by fluorescent units concealed behind louvered, plastic grills. Incandescent fixtures, above the open stacks* (left), *are mounted on trolley ducts for flexibility. From central control desk* (below), *librarian can supervise reading room, main entrance, book stacks, and workroom which is accessible through door behind desk. Colors throughout the building are subdued, ranging from white through various shades of gray, to black accent lines. Intense primary colors are reserved for such items as display panels, furniture, and screens.*

Photos: Frank Lotz Miller

All photos (except as noted): Alderman Studios

auditorium and coliseum

location | Charlotte, North Carolina
architects | A. G. Odell, Jr. & Associates

auditorium and coliseum

Exterior masonry panels of auditorium and coliseum are of precast concrete slabs, approximately 22 ft x 7 ft.

Joseph W. Molitor

The Carolinas' cultural and civic progress is again evidenced by the near completion of Charlotte's Auditorium and Coliseum, financed by bond issue voted by the public. Located within one hour's driving time for more than a million residents and within 15 minutes of Charlotte's business district, the center will probably become the meeting place for the entire region. On the 23-acre site at this time are two buildings: an auditorium seating 2500 persons for the presentation of concerts and theatrical performances; and a coliseum providing 13,500 seats for athletic events, circuses, ice shows, and similar activities. A third structure is proposed between the two, to house exhibitions, meeting rooms of various sizes, and related facilities. The architects' major problem—the proper relationship of the gigantic coliseum to the relatively small auditorium—has been well resolved by separating the buildings by about 200 ft and also by placing the coliseum on the lower portion of the site. The 200-ft spacing between buildings, which will help to keep sound transmittal to a minimum, will provide the appropriate location for the future exhibit structure, envisioned as a horizontal, two-story link between coliseum and auditorium. Access to the center is from streets surrounding the entire property and radiating from it. Parking lots thus may be emptied within 15 minutes. At present, a paved and lighted parking area accommodates 1200 cars. Additional adjoining property has been leased and developed for the parking of another 2400 cars. Total cost of project was $4,698,000.

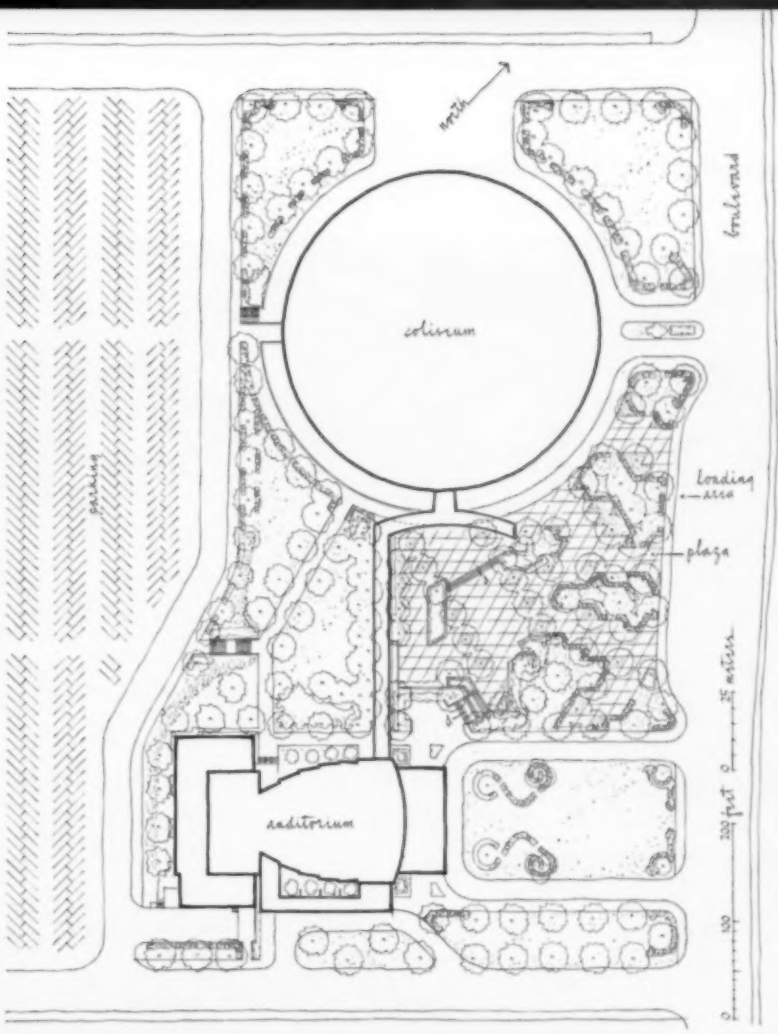
Others contributing to the successful realization of the plan, under the direction and co-ordination of the Architects were: Severud-Elstad-Krueger, Structural Engineers; W. P. Wells, Mechanical Engineer; John Bolen, Electrical Engineer; John A. Heinzelman, Ice Rink Consultant; Bolt, Beranek & Newman, Acoustical Consultants; Wilbur Smith & Associates, Traffic and Parking Consultants; John Lippard, Landscape Architect. Thompson & Street Company was General Contractor.

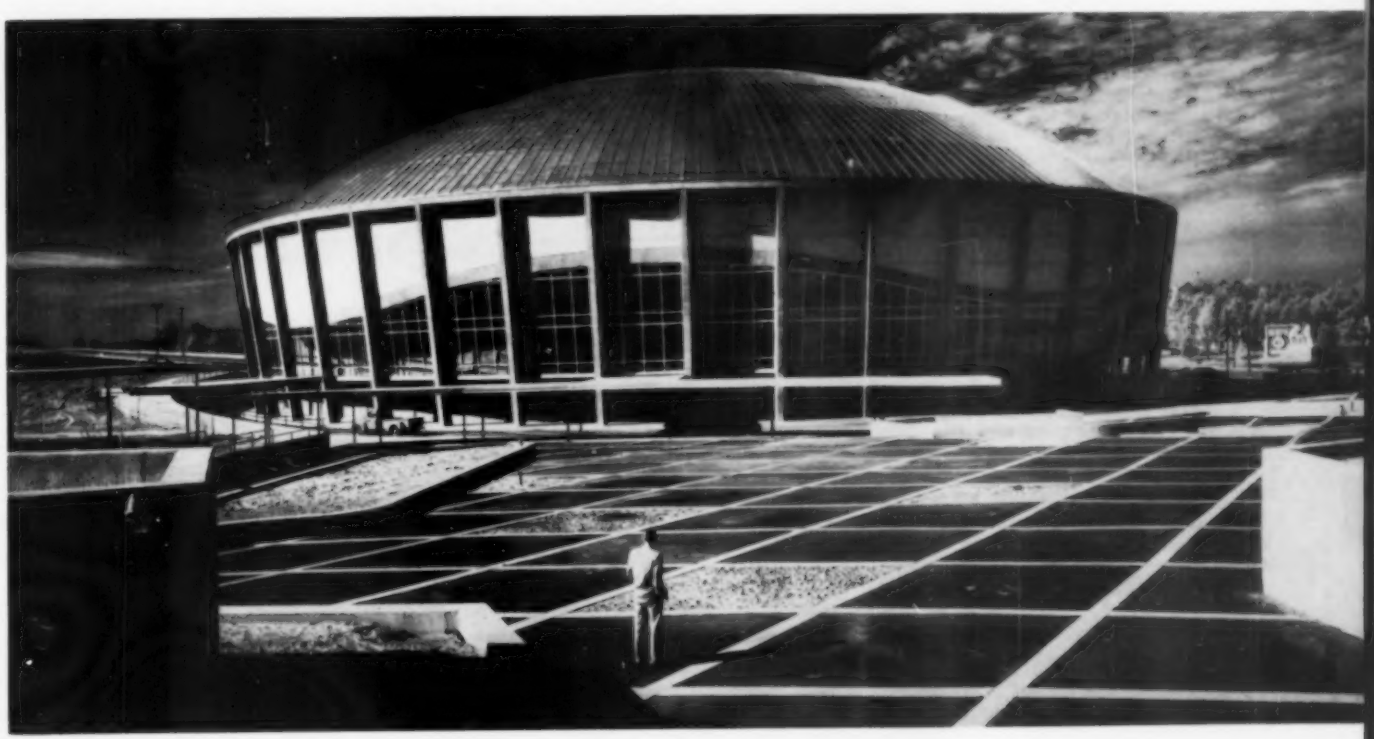
the auditorium

Basic shape of the auditorium and its seating plan were determined primarily by acoustical considerations. The interior design incorporates not only the latest thinking in reverberation control in the form of distributing needed sound-absorbing material in strips at various locations, but also in the shaping of surfaces to direct sound from the stage area to listeners in the most efficient fashion. Thus the shape that evolved was framed most economically by a combination of reinforced-concrete, pre-

cast-concrete, and structural-steel components.

The entire auditorium building is air conditioned, except for machinery spaces. All heavy machinery for the building, other than air-handling equipment, is located in the boiler room under the work area (at southeast corner of basement). Air-handling equipment is located in two air-conditioning machinery rooms—one at the rear of the building, adjacent to the boiler room, and another at front, beneath the lobby. Chilled water is supplied to all air-handling units by a 250-hp centrifugal refrigerating machine. Fans serving five primary areas —main auditorium, areas above and beneath balcony, lobby, and lounge—all operate from a central built-up air-conditioning station comprised of electrostatic return-air filters, activated-carbon filters for odor removal, and the chilled-water conditioner. The temperature condition in each of the five areas is individually controlled by face and by-pass dampers on the inlet side of each fan. Heating coils for each zone are installed





Joseph W. Molitor

in the by-pass to each fan around conditioner. All other areas, dressing rooms, stage, etc., are served by fan-coil-type air-conditioning units with steam-heating coils, chilled-water cooling coils, and face and by-pass dampers.

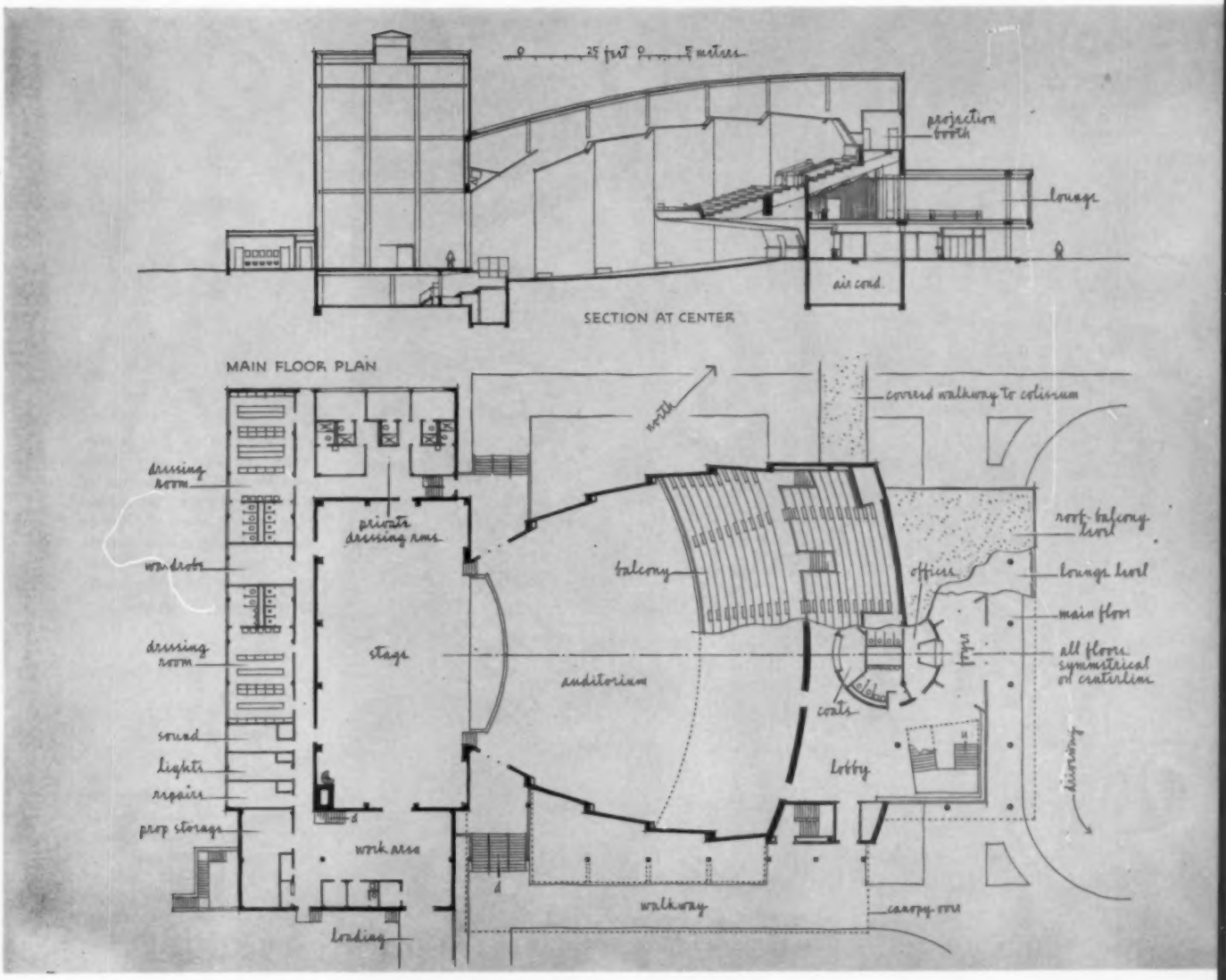
Heating for the entire project (including coliseum) is supplied from the auditorium boiler room. The plant consists of two 400-hp water-tube boilers fired with heavy-oil-type burners. A 70-hp fire-tube boiler, firing light oil, heats office and work areas at times when the main boilers are not in operation.

Air-distribution system is low velocity using standard sheet-metal construction. Masonry return-air ductwork beneath the auditorium and lobby floors provides the greater percentage of return air to the central-station conditioner. In order to obtain satisfactory distribution of air in the balcony, approximately 425 three-in. holes were formed in the risers carrying the balcony seats. Air returning through these same holes to the space beneath the balcony is then directed to the main conditioner. Air distribution for the stage is handled by two main ducts which run down the sides of the stage area—above and outside all curtains and drops.

Temperature-control system for the auditorium is of the pneumatic type.

After a careful study of various supply voltages, 600-v delta was selected. In the judgment of the electrical engineers, the size and application peculiarities of the project (auditorium and coliseum) did not justify a high-voltage system (2400-v and over); however, the conditions did justify the highest low-voltage system (600-v and less). Thus, all integral horsepower motors are fed with 600-v supply.

In the lobby, the light-terrazzo floors,



colored walls, and glass walls are combined with a high lighting intensity, from recessed, incandescent fixtures, to achieve a sparkling effect. Special incandescent-lamp fixtures are placed in the lounge ceiling. They have a gold color plated on the lower portion of their reflectors and star cutouts in the ceiling plates. Placed against a deep-blue ceiling in random pattern, these units provide a star-like effect. The gold color on the inner reflector reflects enough light to illuminate the lobby adequately but not brightly.

The main auditorium is lighted with a series of coves for soft, general lighting and with recessed, high-intensity, incandescent downlights for seeing. The low-ceiling area beneath the balcony, not being suitable for recessed downlights, is illuminated with recessed domelights. All incandescent house lights are on a conventional dimmer bank (located in the attic) and can be controlled either from the projection booth or the central console on stage.

Principal stage lighting is provided by border lights carried on pipe battens. Auxiliary lighting power can be obtained from receptacles in the border lights and by floor-pocket receptacles. A battery of spotlights is located on an attic bridge in front of the proscenium opening. The dimmer bank (in the basement) is remotely controlled at an on-stage console. Total dimmer capacity is 158,400 watts; total fixed lighting in borders, footlights, and spots is 100,000 watts. A dead-front cross-connecting panel on the stage platform permits the connection of any one or all of the 124 stage circuits to any chosen dimmer—thus insuring extreme flexibility of control and high use factor of dimmers.

Protruding second-floor lounge (left) partially covers driveway for weather protection of visitors at entrance. Stairs of terrazzo connect brilliantly lighted first-floor lobby with semi-darkened lounge on second floor. Blue ceramic tiles surface walls at either end of lounge.

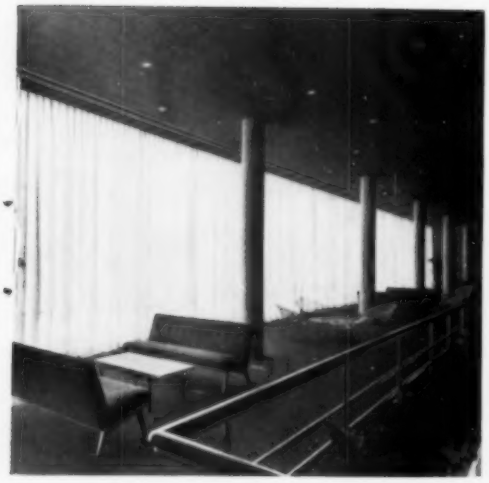
Materials & Methods

construction

Foundation: piles—Raymond Concrete Pile Company. **Structure:** concrete; precast concrete—Lehigh Portland Cement Company; structural steel—Southern Engineering Company, Bethlehem Steel Company, and Tennessee Coal & Iron Division of United States Steel Corporation; steel welding equipment—The Lincoln Electric Company; precast roof deck—Porete Manufacturing Company. **Windows:** sash—Truscon Steel Division of Republic Steel Corporation; glass: clear—Libbey-Owens-Ford Glass Company, polished wire—Mississippi Glass Company; store fronts—Kawneer Company, metal access panels—Morris Kurtzon, Inc.; skylights—Wasco Products, Inc. **Partitions:** millwork—Wearn Lumber Company; metal toilet partitions—Sanymetal Products Company, Inc. **Doors:** metal doors and frames—Atlantic Metal Products Company; overhead doors—Overhead Door Corporation; steel rolling doors—Edward Cahill, Inc. **Hardware:** lock sets—Schlage Lock Company; door closers—L C N Closers, Inc.; hinges—Lawrence Brothers, Inc.; door holders and stops—Glynn-Johnson Corporation; push and kick plates—Trego Industries; exit bolts—Sargent & Greenleaf, Inc. **Surfacing materials:** glazed tile—Natco Corporation; ceramic tile—The Mosaic Tile Company; quarry tile—Carlyle Tile Company; marble chips—Willinghem Little Stone Company; terrazzo divider strips—Manhattan Terrazzo Brass Strip Company, Inc.; porcelain enamel—Davidson Enamel Products, Inc.; laminated plastic—The Formica Company; roof: aluminum sheathing—Aluminum Company of America and Aluminum Structures, Inc.; acoustical insulation—Johns-Manville. **Drainage:** roof drains—Josam Manufacturing Company; parking-area drain gratings—Borden Metal Products Company. **Paint & stain:** Barreled Sunlight Paint Company and Benjamin Moore & Company.

equipment

Lighting fixtures: Wheeler Reflector Company; Pittsburgh Reflector Company; Day-Brite Lighting, Inc.; Garden City Plating & Manufacturing Company; Perfeclite Company; Rambusch Decorating Company; Holophane Company, Inc.; Silvray Lighting Company; Kliegl Brothers; stage lighting: dimmers—Ariel Davis Manufacturing Company, borderlights—Major Equipment Company, portable lighting—Century



A. C. "Bill" Summerville

Details of second-floor lounge (above and top right) *reveal design character of interior finishes and furnishings, in comparison to utilitarian aspect of coliseum interior. Mural behind concession counter was executed by Elizabeth Mack.*

Auditorium interior (right) *is of simple architectural form but rich in color. Ceiling is dark blue; wall panels are in shades of blue; seats of seven different colors, from light pinks and blues to dark blues, reds, and purple. Aisle carpeting is bright red. Contour curtain is pale pink; backdrops range from deep pink to dark red.*

Lighting, Inc., spotlights—Knoxville Scenic Studios and Genarco, Inc.; exterior lighting: light poles—Revere Electric Manufacturing Company, fixtures—Russell & Stoll Company, Inc. **Electric distribution:** substation equipment, panels, and stage switchboard—General Electric Company; wire—Anaconda Wire & Cable Company; conduit—Walker Electrical Company, Inc.; lightning protection—St. Louis Lightning Protection Company; electric motors and starters—Westinghouse Electric Corporation; generators—Fairbanks, Morse & Company; floor boxes—Hope Electrical Products Company; exterior lighting: transformers, switches, and panels—General Electric Company. **Heating & air conditioning:** units—Marlo Coil Company; boilers—Erie City Iron Works and Fitzgibbons Boiler Company, Inc.; pumps and compressors—Worthington Corporation; air-handling equipment—American Blower Corporation; diffusers—Anemostat Corporation of America; grills—Tuttle & Bailey, Inc.; filters—Connor Engineering Corporation; thermostats—Minneapolis-Honeywell Regulator Company. **Ice rink:** evaporative condensers and equipment—Buildice Company, Inc.; compressors—Worthington Corporation; gages—James P. Marsh Corporation; motors—Howell Electric Motors Company. **Plumbing & sanitary:** plumbing fixtures and shower valves—Kohler Company; toilet seats—Swedish Crucible Steel Company; water heater—Crane Company; floor and shower drains—J. A. Zurn Manufacturing Company; soil pipe and fittings—Charlotte Pipe & Foundry Company; circulating pumps—Bell & Gossett Company. **Special equipment:** aluminum plaque and letters—Michaels Art Bronze Company, Inc.; fire-protection equipment—Elkhart Brass Manufacturing Company; sound system—Altec Lansing Corporation; public seating: American Seating Company, Ideal Seating Company, Shwayder Brothers, Inc., and Sico Manufacturing Company, seating upholstery fabrics—Collins & Aikman Corporation; scoreboards—Spencer Display Corporation; portable basketball floor—Cincinnati Floor Company; concession equipment: bottle coolers—LaCrosse Cooler Company, dispensers—Bastian-Blessing Company, grills and popcorn machine—Star Manufacturing Company, Inc., stainless-steel sinks—Legion Stainless Sink Corporation; carpeting—C. H. Masland & Sons, carpet pads—General Felt Products Company, draperies—Wil-Kin Theatre Supply, Inc.

auditorium and coliseum

No steel member of the dome, except for compression ring (photos here *and* section acrosspage), *is deeper than 18 in. All-welded construction helped to lighten dead load, which is only 22 psf, including continuous, structural-steel, perimeter, tension ring. Dome is covered with three-in. precast wood-fiber planks (which also have necessary insulating and acoustical properties) on bulb tees, topped with approximately one-in. concrete parge which in turn is covered with sheet aluminum* (see June 1955 P/A). *All roof steel, contiguous utility piping, and conduit-duct work were painted from top prior to installation of prepainted roof planking.* Photos: Joseph W. Molitor

the coliseum

Primary considerations influencing the coliseum design were economy of construction and future maintenance, flexibility of use, and ease of circulation. Its circular shape allows a remarkably economical roof structure, greatest square footage for perimeter, and maximum number of seats on either side of the arena.

Heating and ventilating equipment consists essentially of the following:

1. Sixteen air-handling units located around the periphery of the building (*note photos above*). These units (each moves 20,000 cfm) may be operated on 100 percent return air, 100 percent outside air, or a mixture of the two as determined by the operator and/or the automatic temperature-control system. Temperature controls for each unit provide a cycle operation which uses 100 percent return air during warm-up period. As temperature reaches the thermostat setting, a further rise in temperature shuts off heating coil and begins to open outside-air damper while closing the return-air damper. The outside- and return-air dampers may also be manually controlled from a central control panel to introduce 100 percent outside air whenever required.

2. A series of propeller-type exhaust fans is mounted behind aluminum louvers, 2½ ft deep, which encircle the structure below periphery of dome. The louvers are used to obtain fresh air for the units or to exhaust air from the building.

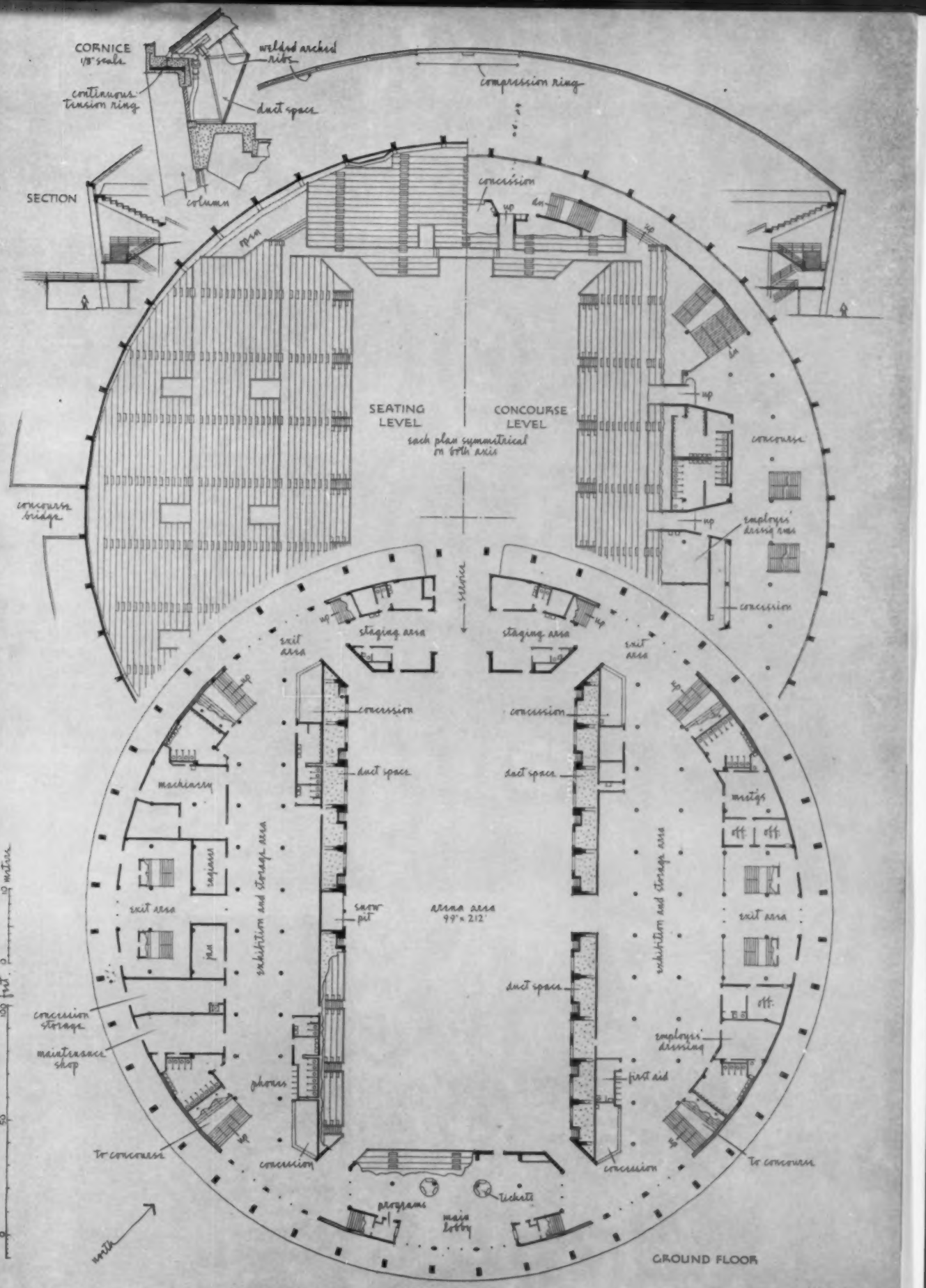
3. Four, large, double-inlet, centrifugal fans are situated immediately behind the arena floor wall. These exhaust air from the floor level through grills in the arena-floor wall and discharge it through ductwork beneath seats to the upper ring of louvers. There, air may be either exhausted or returned to certain air-handling units for recirculation.

Auxiliary heat is supplied in concourse and work and office areas by means of unit heaters and cast-iron radiation.

As cited earlier, steam is brought to the coliseum from the main boilers in the auditorium. At the coliseum, the steam main raises to feed a main distribution steam loop which encircles the building at an elevation just above the air-handling units. All heating units are down fed from the loop except for unit heaters and radiation at ground level.

An ice-rink floor, 200 ft x 85 ft, is served by a circulating brine refrigerating system consisting of a brine chiller, brine-storage tank, two 125-hp reciprocating compressors, and two evaporative compressors. Both compressors are in operation only when ice is being frozen.

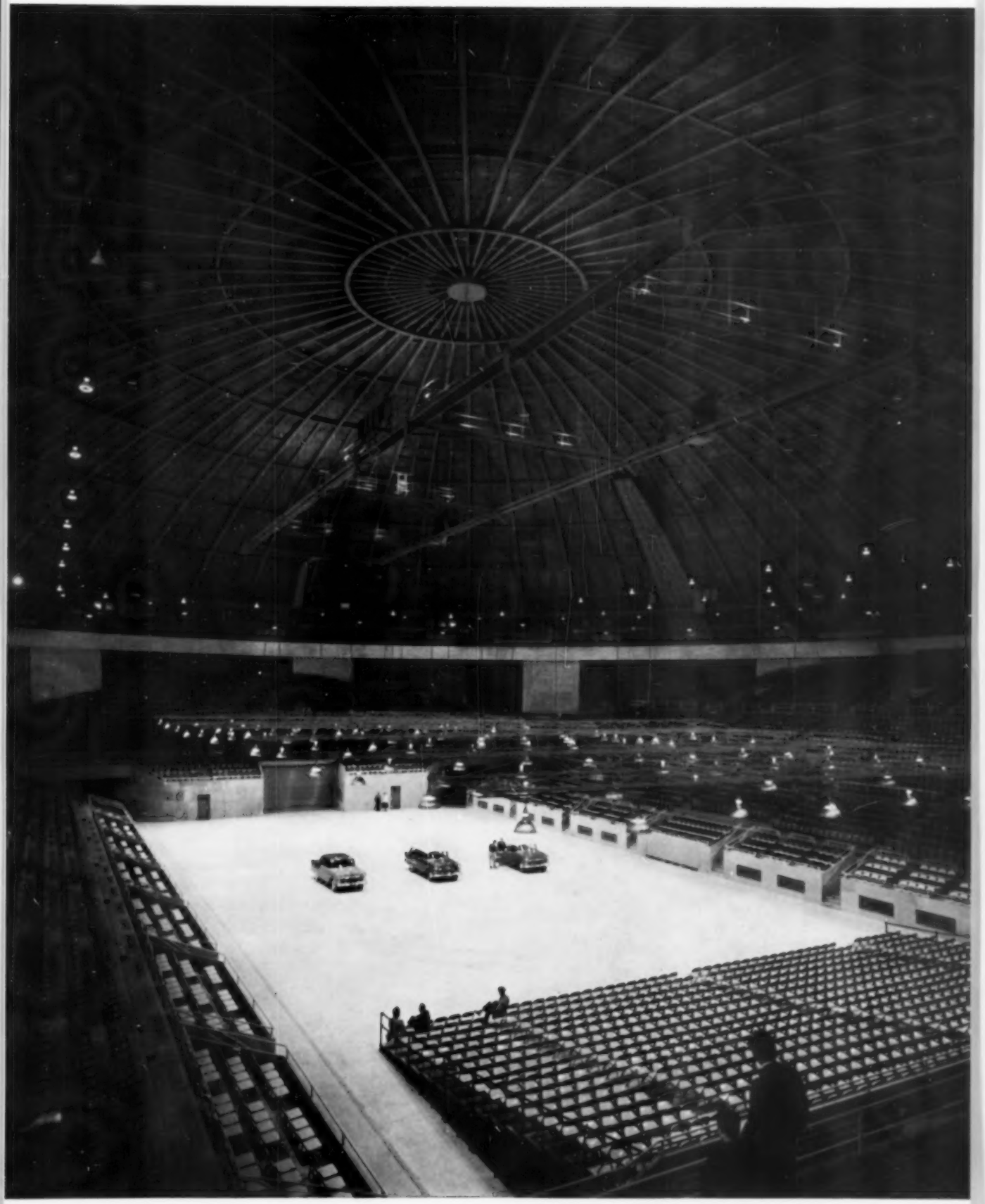
All coliseum lighting, with the exception of some fluorescent in the exhibition area, is incandescent. Units over the seating area are high-bay and low-bay lamps in 500-, 750-, and 1000-w sizes. These are hung by disconnecting-type hangers which permit them to be lowered for relamping and maintenance. Lighting over the arena proper consists of one hundred and thirty 1500-w high-bay units mounted on seven 85-ft long steel-tube frames that can be raised or lowered by winches on catwalks above. Maximum clearance of frames above floor is 65 ft; minimum level is five ft. When positioned at 35 to 40 ft, an illumination of well over 100 ft-c maintains at floor level so that color photos or movies can be taken without auxiliary lighting. Spotlighting is accomplished by eight 3000-amp arc-type spots on special platforms placed above the seating area near the perimeter of the building. Largest motor load comes from the two refrigeration compressors of the ice-rink equipment.


CORNICE
1/8" scale
welded arched ribs
continuous tension ring
duct space
compression ring
SECTION
column
concession
up
dn
opera
SEATING LEVEL
CONCOURSE LEVEL
each plan symmetrical on both axis
concourse
concourse bridge
employees' dressing room
service
staging area
exit area
concession
duct space
machinery
exhibition and storage area
arena area
99' x 212'
crew pit
offices
meetings
concession storage
maintenance shop
showers
first aid
To concourse
programs
tickets
main lobby
north
feet
meters
GROUND FLOOR

auditorium and coliseum

Bridge (above) *leads directly from parking lot to second level of coliseum, from which seats can be reached directly through the vomitories. Blue ceramic tile covers exterior walls of coliseum up to the continuous overhang. Continuous open concourses* (left) *encircle the building at this level. Interior open stairs connect with first level 15 ft below. Time tests show that building is normally evacuated within four minutes.*

Colorful panels of painted, precast, wood-fiber planks were placed at opposite ends of arena (acrosspage), *for acoustical reasons.*



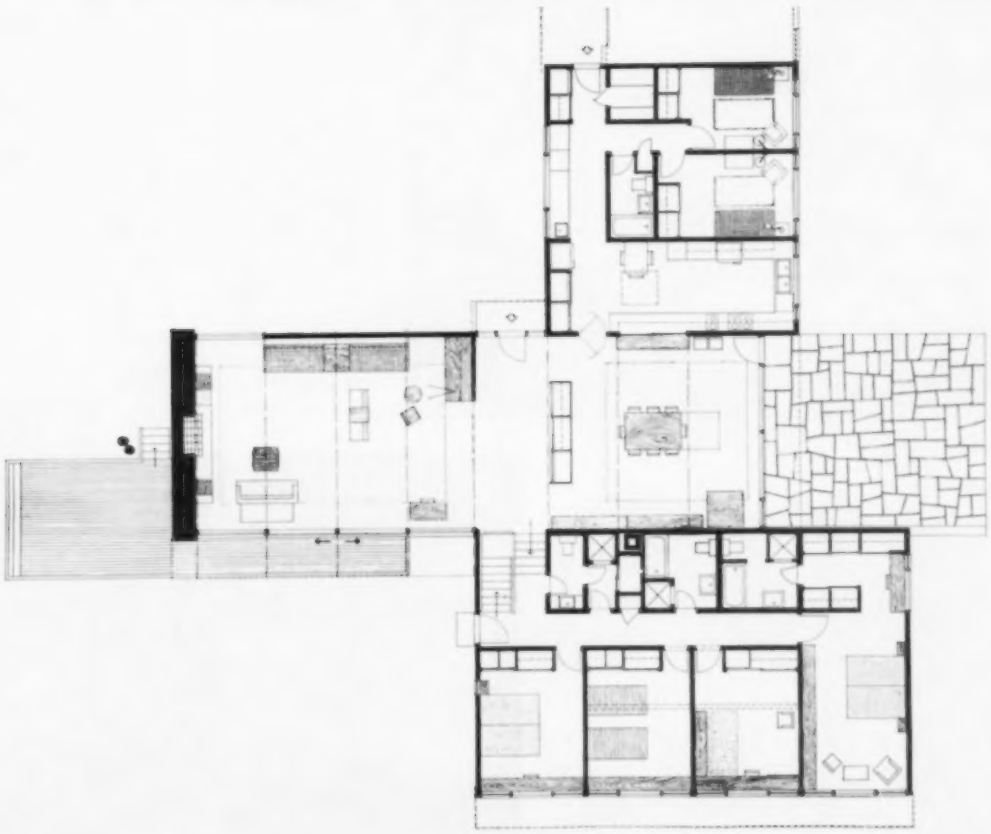
house

location | Weston, Connecticut
architect | Huson Jackson
associates | H. Seymour Howard, Jr., and Harold Edelman

The large family for which this house was designed—three unmarried children living at home; two married children and numerous grandchilden living near by—enjoys large-scale, all-day get-togethers as well as occasional evening parties for up to 100 guests. The need, therefore, was for some large area where groups could be readily accommodated; yet sufficient separation of activities so that children would not be disturbed by grown-ups' parties and vice versa. The solution is a huge, only partially subdivided living/dining space extending through the center of the house, while the bedroom wing is placed on a lower level and insulated from the family living space by baths, storage units, etc. In the opposite wing are kitchen, general service facilities, and rooms for two servants.

The site offered problems, as it was one of the last available pieces of land in an area near summer recreational facilities, and it included a swamp and a tangle of fallen trees and glacial boulders. The unusual shape of the house is largely a reflection of the limited area on which building was practicable.

Bedroom and living-room wings of the essentially frame house have roofs of plank and laminated-beam construction. Forced hot air is used for heating. To control sound, walls between bedrooms are framed with staggered studs, with insulation batts woven between. General Contractor: Olof Theander.



Plan from architect's office.

On the east side of the house (top) *a terrace extends the living/dining space outdoors; exterior siding is cypress.*

On the approach side of the house (left) *a garage that will be added to the service wing "will improve the proportions of the design," in the architect's opinion.*

Much of the furniture was architect-designed and built by Cabinetmaker Harvey Blackman.

The architect feels that the plank-and-beam construction used in the family-living space "achieves a greater sense of enclosure, quiet, and domestic scale than would have been possible with trusses or rafters and tie beams."

Photos: Louis Reens

laboratory equipment by Edward Grey Halstead*

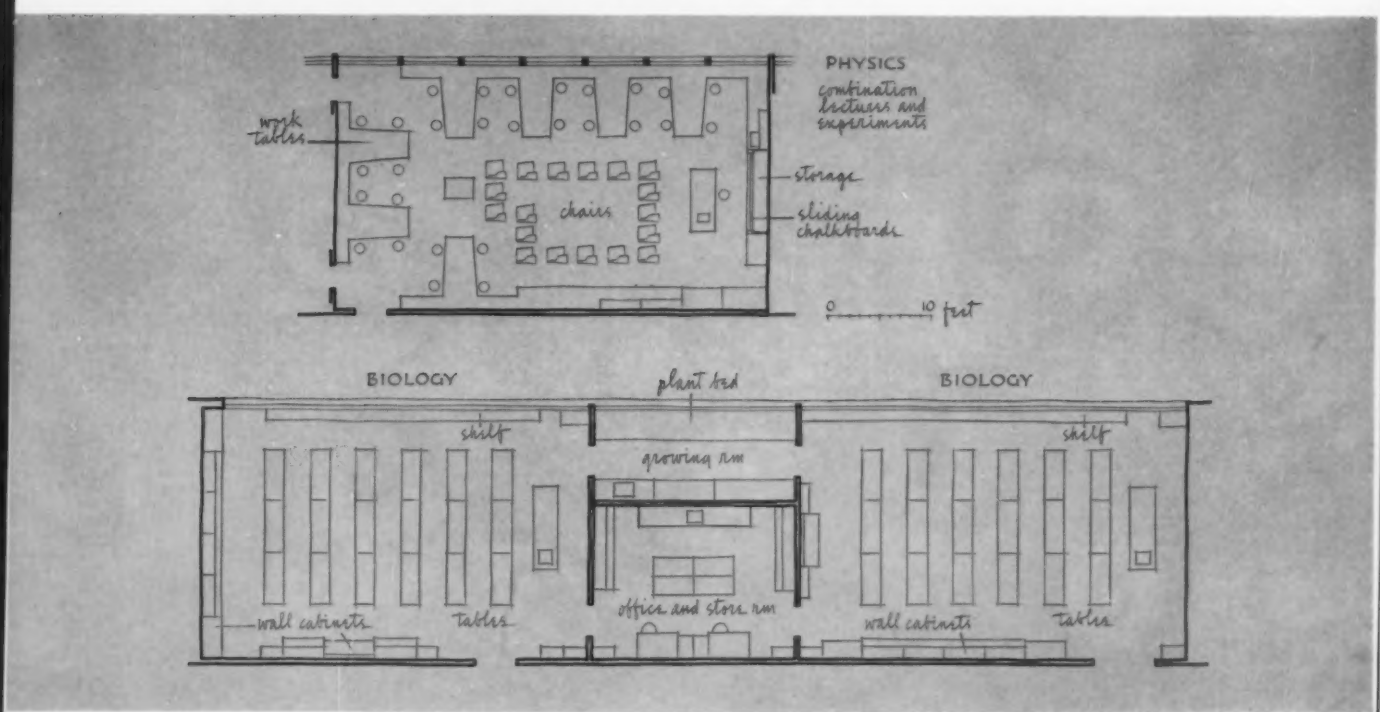
Institutions (such as schools and hospitals), industrial organizations, and other groups whose buildings require installation of laboratories for research, for testing and quality control, or for instructional purposes are demanding more and more from the architect in the design and detailing of these units. The successful architect has kept abreast of changes in the various related technical fields so that his clients can be assured of receiving the facilities they need, and so that his projects in their entirety can be planned and co-ordinated with construction most economically.

Hand-in-hand with this growth in demand has been the expansion of a highly specialized industry devoted to the design and manufacture of laboratory equipment. The importance of this industry—basic to the nation's scientific and technological progress—has been recognized ever since World War I, when too great a dependence on foreign suppliers for highly specialized equipment taught the United States many lessons.

Constant liaison with the country's architects in developing adequate and workable science and engineering laboratories is a factor that has helped, in no small way, the growth of the laboratory-equipment industry in this country. Other factors include competent engineering and design departments within the industry itself and the co-operation of scientists and research engineers. As a result of the co-operative endeavors of the architect, the equipment manufacturer, and the ultimate user in meeting the changing needs of developing technologies, the

* *Member of Jensen & Halstead, Architects, Chicago, Ill.*

Combination lecture room and physics laboratory for a high school (below, top) *illustrates perimeter planning.*
Biology suite with growing room and storeroom (below, bottom) *illustrates high school or junior-college plan.*



architectural profession has been provided with invaluable services including design of specialized units, custom manufacture of these units, and properly controlled installation.

These services, geared as they are to the highly specialized laboratory-equipment needs of our growing technology, have made the role of the so-called "millwork" producer of a previous generation practically obsolete and, in most instances, certainly insufficient as far as the modern laboratory is concerned. This obsolescence can easily be seen in a comparison of the laboratory devices illustrated in catalogs in the early 1900's with the complexity of the units shown in current catalogs.

In contrast with the old-style catalogs, laboratory equipment is classified today into several application and usage groups to meet the needs of specialized laboratories. The principal groups are:

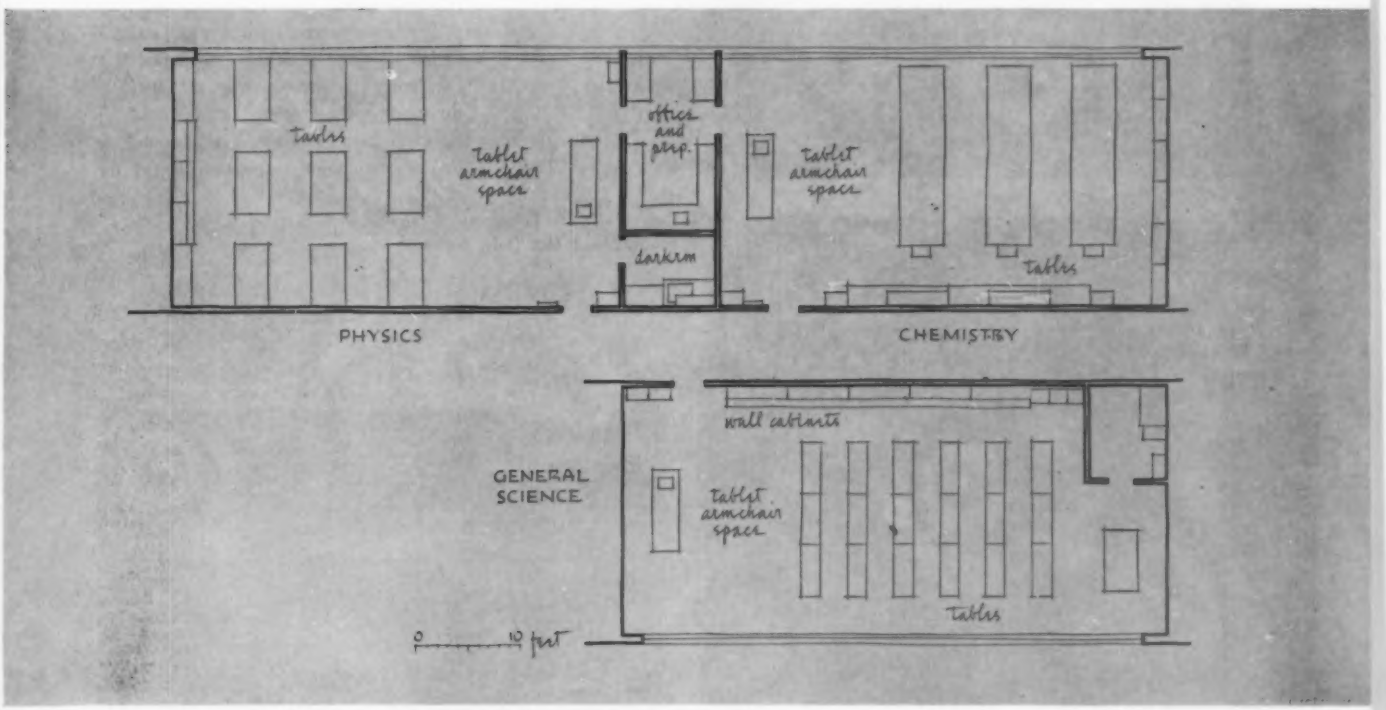
1. *Working surfaces* and *specialized plumbing and electrical fixtures.* Worktops and fixtures will vary with the nature of the work to be done and type of reagents and materials to be used.

2. *Base units and other top supports.* Determined by desirable storage procedures and the work to be performed at each station.

3. *Sinks, drainboards, and troughs.* Amount of work involved in the laboratory, the types of solutions, and function of the laboratory govern selection of these items.

4. *Hoods* and other fume-disposal units. These are particularly important where heating or other high-temperature work is required and demands special consideration if materials, which may generate

Physics and chemistry laboratory suite with lecture space in each laboratory for average high school. Darkroom, storeroom, etc. separate the two basic functions. Arrangement of general science lab is similar.



Students conduct experiments around multipurpose science tables in high-school science laboratory.

General-science laboratory is equipped with two-student tables (left, center).

Combination high-school science laboratory with four-student tables.

toxic fumes, are a part of the laboratory work.

5. *Storage and display cases* other than table assemblies. These vary, obviously, with the amount and type of material to be accommodated, and become increasingly important if refrigeration or constant temperature and humidity are required.

6. *Accessory equipment* — baths, hot plates, centrifuges, autoclaves, etc. The manner in which this type of equipment is handled can greatly effect the flexibility and operation of a laboratory. Sometimes it is proper for these to be built-in, often they must be portable so that they can be shifted from station to station.

7. *Electrical service fixtures*, mains, branch lines, and outlets. Require careful analysis by the architect and must be related to future expansion or alteration of the laboratory. A well-planned laboratory can be altered to meet new functional requirements relatively easily.

8. *Piping* for water and other liquids, waste lines, and traps. Must be placed with the same care as the electric services. Laboratories where these lines are not placed with changes in mind are expensive to alter.

The development and design co-ordination of these various components of a laboratory in such a way that two or three, or several units, can be fitted or installed in a "modular-like" manner, is one of the major responsibilities of the

equipment manufacturer. It is also his basic contribution to the architect.

The architect can often save his client money by using standard production units which the manufacturer has designed to be assembled to meet various laboratory requirements. It is seldom necessary to design and specify a completely custom-built installation. But close co-ordination with the maker is required in order to obtain from standard units the neat, unified appearance necessary in an orderly, functional laboratory.

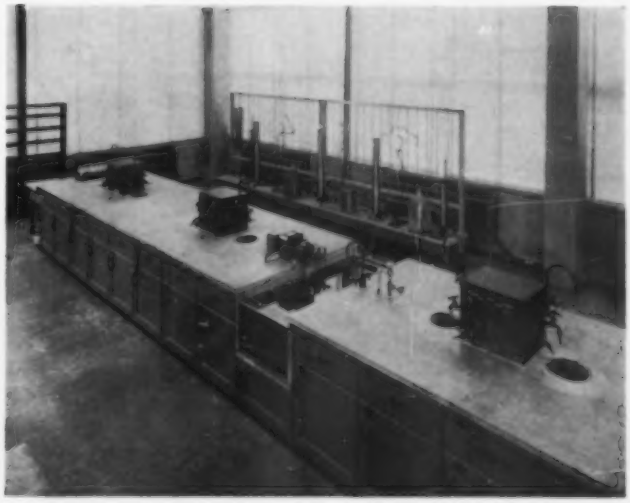
Where intricate and complex special equipment is a part—major or minor—of a laboratory installation, the manufacturer of the standard units can ordinarily be depended upon to design the special units so that they will harmonize with the over-all pattern established by standard unit assemblies.

If the installation of a laboratory or of laboratory equipment is to be co-ordinated properly within the construction schedule, the planning must be considered in two stages. The first being the provision of what might be called adequate "lead time," which is another way of saying that the laboratory and laboratory equipment must be thought of by the architect as a unit. Deciding only on the dimensions of the space that the laboratory is to occupy at the design stage is insufficient. It is better practice to indicate the placement of the equipment on the drawings at the same time. When working drawings are pre-

***Combination** lecture-laboratory chemistry installation for high-school level* (right).

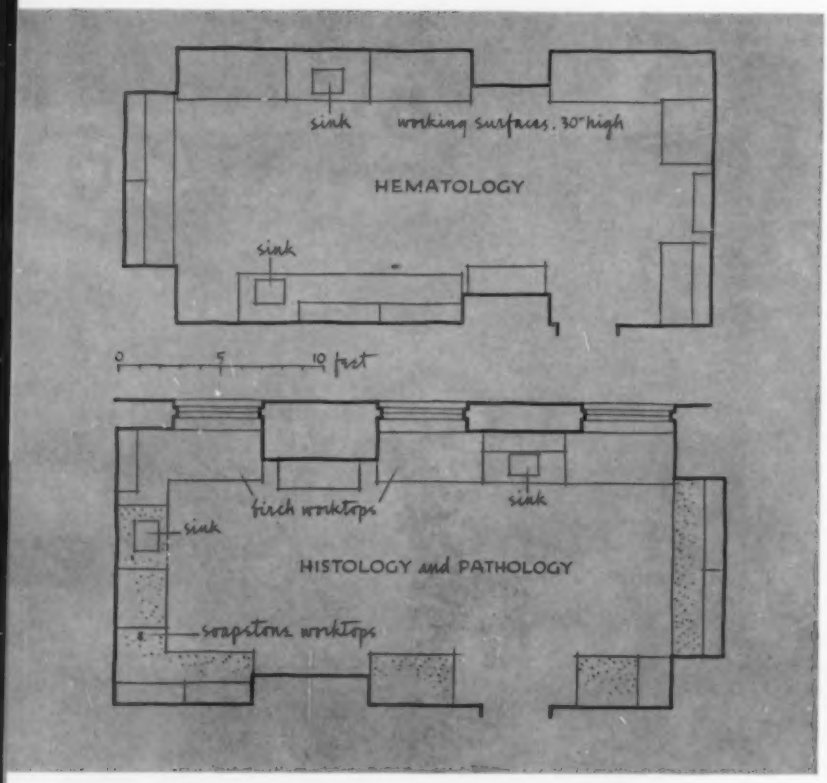
Perimeter-planned science laboratory with tablet-arm chairs for lecture area (right, center).

Physical chemistry and/or chemical engineering laboratory for college or university level (right, bottom).



City laboratory for sewage-treatment plant.

Hematology laboratory adaptable to increasing investigative work loads in the modern hospital.



Proper arrangement of equipment for hospital histology and pathology laboratory that provides adequate work areas.

pared, if placement is not shown, other considerations than location of equipment may control the location of utilities lines. Often, it is prudent to specify the laboratory units at an early stage, so that plans for their manufacture and installation can proceed with the over-all plans for the entire structure and delays at crucial moments, because of special equipment in the laboratory, can be eliminated.

From the laboratory-equipment manufacturer's point of view, there are twelve steps that should be followed in planning and constructing a satisfactory laboratory installation. These are planning, specifying, bidding, field checking, detailing, scheduling, fabricating, finishing, trimming, inspecting, shipping, and installing.

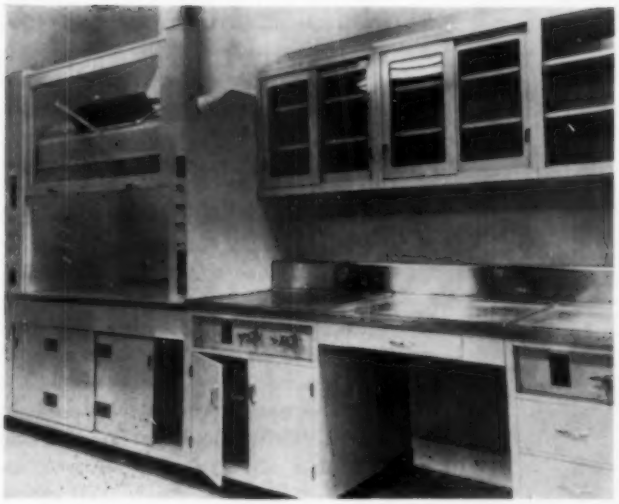
The first two of these are, naturally, the function of the architect, and the remainder are peculiar to the manufacturing of the equipment specified.

Planning by the architect is basic, of course, and all functionally co-ordinated installations have their origin in this stage. The fundamental problems of number and duties of the students, researchers, or technicians involved, the function or objective of the laboratory, anticipated flow of traffic and materials, and the area required for the people and equipment to work properly, are all influential in the planning. The service facilities, plumbing requirements, light and air available, and other factors must be developed after the fundamental problems have been solved. Additional thought must be given to supplementary work surfaces, storage facilities, and safety regulations.

Typical floor plans (as shown) are intended to indicate how planning can include the types of equipment as well as general dimensions. The designs of the laboratories illustrated are based on experience and can serve as suggestions in providing for specific uses of the scientist, engineer, researcher, and teacher.

Architects can obtain valuable data, which can be used in solving planning and design problems related to laboratories and laboratory installation, from manufacturers of such equipment. Industry-wide figures compiled by the Scientific Apparatus Makers Association indicate that almost 10 percent of the total-industry labor force is made up of layout men,

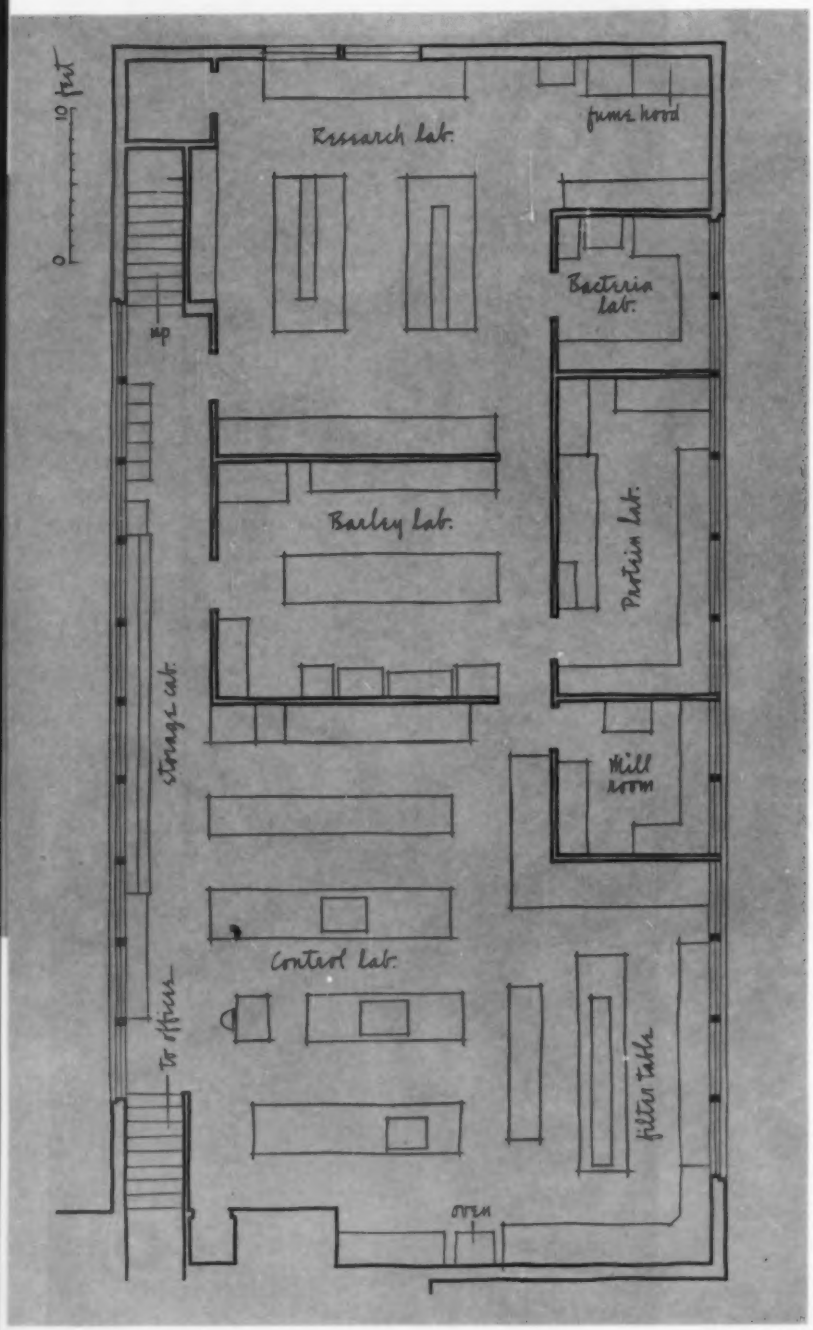
General-purpose hospital laboratory section.



Specialized laboratory equipment for hospital radioisotope laboratory.

Health-laboratory glassware-cleaning department, state office building.

Plan illustrates section of research and quality-control laboratories in malting company, showing specific work areas.



draftsmen, and engineering personnel. While the services of these men are available to assist architects in design problems on the same basis that consultants are available, the internal workings of the industry demand that these men do research in planning, construction, and development of laboratory equipment. Similar services are available to contractors in helping them develop and maintain construction schedules and to link utilities with the laboratory equipment in the proper manner.

To whatever degree consultation with a laboratory-equipment specialist is required, it will be an invaluable service. These specialists are familiar with problems that every architect must consider when designing a technical laboratory, whether it is a building in itself or a single part of a larger facility, such as a quality-control unit in an industrial plant, a science or chemistry room in a school, or a testing laboratory in a hospital.

There are, of course, problems which are definitely architectural in nature and which, in effect, relate the laboratory to the over-all service and utilities scheme of the building. The architect alone can be expected to perform this type of planning and co-ordination. This is particularly true when it is remembered that each project is an individual architectural concept and no specific comments can apply equally to all laboratory installations.

Sound architectural practice requires that ventilation and air-change problems receive special consideration. Air conditioning is virtually essential in hospitals and industrial laboratories. Ordinarily, the system should provide both temperature and humidity control, filtering equipment of very high quality, and an electrostatic system—the ideal system being one of double ducts with individual room control.

Better practice suggests that the ex-

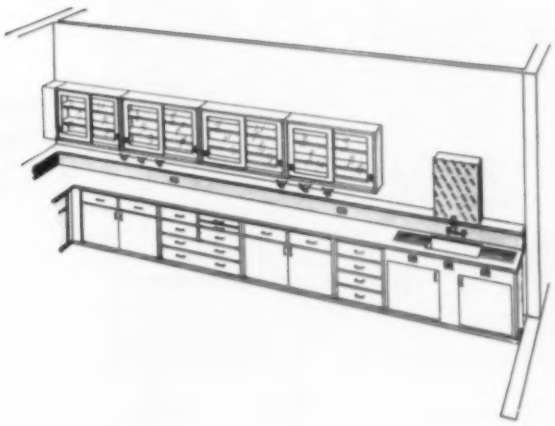
haust-ventilation system for the laboratory be separate from the remainder of the building. The system for laboratory exhaust should be so designed that it carries laboratory air directly outside to an area where wind currents or the prevailing winds will not carry the exhausted air back into the building through windows, air intakes, or other openings.

A separate exhaust system may require extra care in planning the air intake and the heating system. Air-change loads must be balanced carefully, because of the somewhat artificial atmospheric conditions created by the air conditioning. The additional exhaust system, if not compensated by air intake, can reduce barometric pressure sufficiently to affect the readings of delicate laboratory instruments.

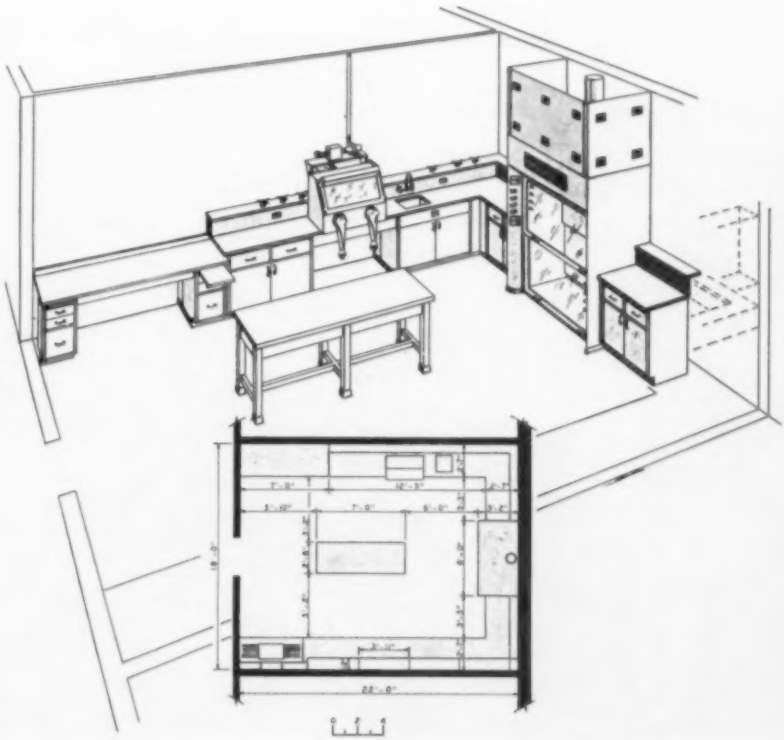
The air-change system should have a 100 percent capacity so that it can accommodate odor removal quickly.

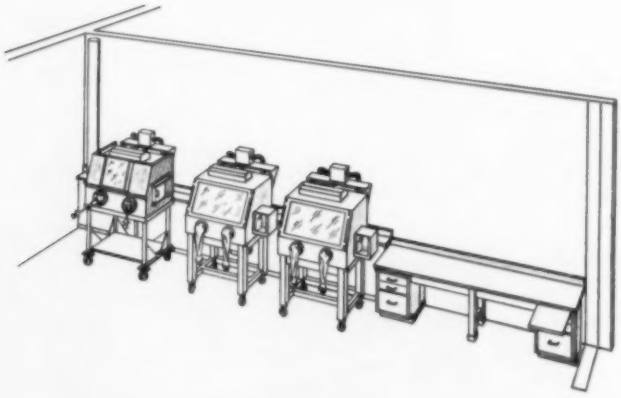
Virtually integral components of the laboratory ventilation system are the exhaust hoods which serve to draw toxic fumes, unpleasant odors, and heat out of the laboratory. These hoods influence air change and air flow considerably. Ordinarily, hood stacks should be extended directly to the outside or into a separate exhaust system if direct outside disposition is not possible. A minimum number of changes in directions is also desirable. The same considerations apply to these ducts as to the ventilation system in regard to re-entry of fumes into the building. Each hood should have an automatic damper in its exhaust duct which can be closed if the hood is not in use.

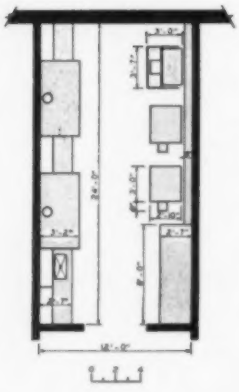
Careful investigation may be required into the material of which the ducts are to be made, depending on the nature of the fumes to be exhausted. Generally, stainless steel is used, although other materials are suitable. In the event of extreme temperature variations or wind



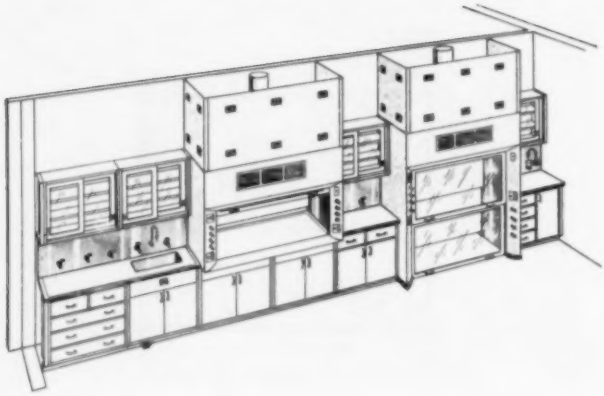
Chemistry laboratory for industry adaptable to organic and analytical chemistry. Note desk space for personnel; laboratory was sized to accommodate two or three persons. Equipment is shown along three walls (above *and* below).







Radiochemical laboratory—high and low-level isotopes. Suggested floor plan offers wide variety of laboratory working space areas. Equipment along opposite walls is shown (above *and* below).



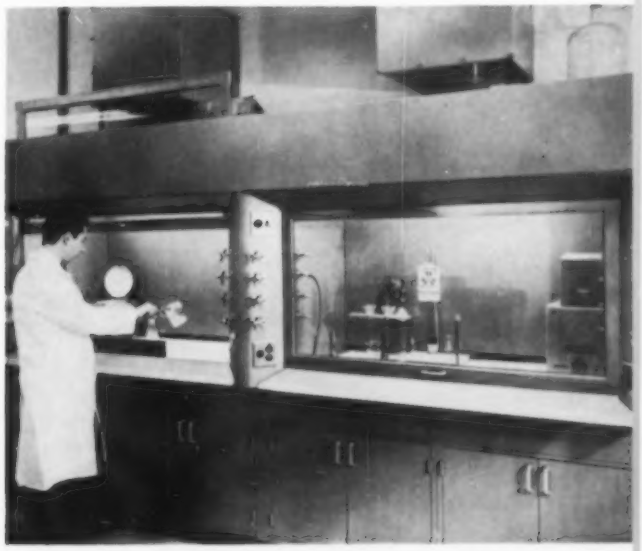
velocities, special consideration as to size of the duct and its insulation will be required.

Corrosive action of waste will be a major factor in the selection of drain materials. Local plumbing or building codes will often cover special cases and specify what type of materials are to be used and how the drain lines are to be vented. Venting becomes especially important where more than one laboratory operation empties into a common line, because of the development of unpredicted mixtures which conceivably may become explosive or toxic. Vent and waste lines should be at least one size larger than for a conventional system and the pipe material should be resistant to chemical action.

The architect must also give particular attention to alterations and potential remodeling in the laboratory itself when laying out drains and other facilities. Frequently, the function of a laboratory is changed; often the original equipment installed becomes obsolete; many times special testing apparatus or pilot plants must be installed for a short time only; this makes it mandatory that drain lines, plumbing, water supplies, electrical outlets, and other facilities be laid out with change rather than permanency in mind.

More than likely, local codes will govern sizes and materials for water lines and sanitary facilities. However, these codes may not cover the unusually large demands for water which may be made by some laboratory operations. An architect should be sure that water supply to the laboratory is adequate to service all outlets at all times.

This usually can be assured by specifying larger pipes in the laboratory system than in the remainder of the building. A hot-water-return system should be used.



Hood facilities for industrial radioactive laboratory.

Particular importance is given to clean-out facilities, which ought to be more easily accessible in laboratories than in other installations. Frequently, there is danger of heavy sediment or aqueous-setting materials entering and clogging the drains.

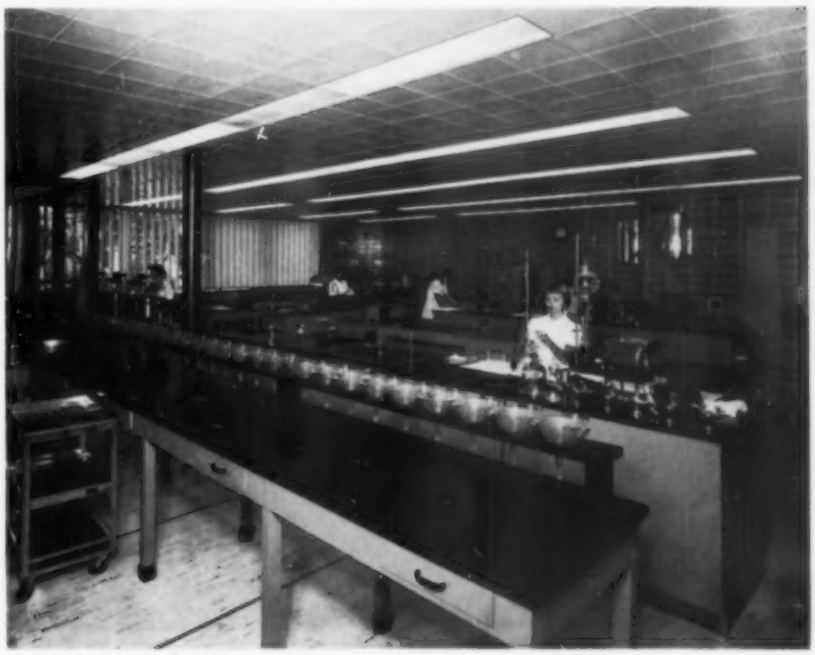
Emergency shut-off controls are a desirable safety measure. They can be installed to handle the entire laboratory or each piece of equipment, such as fume hoods. Color coding will help laboratory technicians if services other than hot and cold water are provided through similar or adjacent outlets. A large variety of services is possible. In addition to the ordinary hot (180F) and cold water, a line for distilled water may be required; a steam line with 35-lb pressure may be needed for fume hoods as well as at sterilizers and autoclaves; other lines will carry compressed air, gas, vacuum, oxygen, and other special gases, and special liquids such as solvents.

All of these services, as well as electricity and utilities should be provided in a valved grid system, so that laboratory alterations and changes can be made efficiently.

Most laboratories of any size will need a distribution panel to control electricity; this is another instance where the anticipation of future requirements can pay off well. Naturally, careful study will be made of current needs before scheduling and wiring of circuits, and more than one panel will be used when several types of power are required. Generally, at least two a-c voltages will be needed. Convenient location is necessary for all control panels, though care must be taken, particularly in school laboratories, that these are not easily available to unauthorized persons.

Electric lighting for laboratories must meet high standards. It should be dif-

Section of industrial research and quality control laboratories.



Section of industrial research laboratory.

fused, glareless, and have a rating of 60 ft-c at each bench. The fixtures should be located so that they can be easily cleaned and so that shadows on tables and working surfaces are minimized. Control of lighting is important and a modulating control system may offer advantages in some laboratories.

Natural lighting should be provided, if at all possible, but precautions are necessary to control direct rays of the sun by use of darkening shades or some other device. These rays must be controlled to eliminate glare and reflection; furthermore, many instruments and materials are affected adversely by direct sunshine. Window sills should be higher than the top of the benches or tables, if feasible, to prevent the collection of refuse on the sills. Double glass may be installed in the windows where temperature control is important.

Temperature and humidity control are often particularly important in storage areas and it is considered good practice to provide separate areas for storing wet materials and for storing dry matter. Generosity in allocating storage space is essential. In large installations, purchasing for inventory may be governed by market prices. This will lead to larger purchases when prices are low even though anticipated usage is some time in the future. A cold room with a constant temperature of 35F will be required in many cases, particularly if heat-sensitive drugs and chemicals are required in the laboratory work. When narcotics are involved, special locked-storage spaces are required.

At each station, some storage space will be required for reagents and other items used with some degree of regularity.

If radioactive materials are to be used in the laboratory, extra precautions are required. The room must be completely shielded with lead on all sides, as well as in the ceiling and floor. A separate air-conditioning system is a must, and air from such space should be 100 percent

exhausted and filtered before discharge. Electric shut-off switches should be on the outside of the room, doors must be fitted closely, and working surfaces should be of material that will not absorb nor retain radioactive particles.

Wall, ceiling, and floor finishes in a radioactive laboratory should be of a finish that can be readily and thoroughly washed. Even in laboratories, where radioactivity is not a matter of concern, cleanliness of walls and floors should be relatively easy to maintain. Wall surfaces should be a smooth finish with a hard-gloss or semigloss material. Floors must be nonabsorbent and in some laboratories, special consideration will be given to the floors since laboratory work may require materials or liquids that tend to cause deterioration in conventional flooring materials.

All possible safety precautions should be included in planning the laboratory. Emergency showers should be built into the laboratory itself, conveniently located so that injuries from chemical burns and minor explosions can be reduced. An electric switch, to cut off all power, should be near the door, clearly marked, and an emergency-power circuit for safety lighting should be installed. Most industrial laboratories, and many others, will have to be electrically grounded. First-aid supplies should be easily available and their location well marked. To handle fire emergencies, the laboratory should be equipped with an adequately coded fire alarm and an overhead sprinkler system, preferably using carbon dioxide.

All of these many factors influence the laboratory and each factor must be co-ordinated into the general plan of the building.

The problem is sufficiently complex as to require the design development of the laboratory to proceed concurrently with the design development of the entire building. Co-ordination will suffer if the entire laboratory design is not carried through as the building layout is developed. Giving the laboratory primary consideration throughout the design stage of the structure, whether it is a building in itself, or located in an industrial plant, hospital, or school, will provide a functional installation with virtually complete correlation of the many diverse features of an efficient and economical laboratory.

Following careful planning of the building, the laboratory specifications must be prepared and arrangements made to obtain laboratory equipment, which will meet the prescribed specifications, and for its installation. Purchasing procedures which will obtain maximum benefit from the careful planning should be used.

For the full protection of the owner, and to maintain satisfactory bidding and purchasing procedures, the specifications should be prepared in sufficient detail, to assure obtaining the specialized equipment required. Furnishing and installing laboratory equipment can be a separate prime c ntract or it can be covered by a general contract. The qualifications of the organization which will manufacture and install the equipment must be clearly and concisely stated whichever method is used and, where possible, the bidding should be limited to qualified firms. It is possible to work with one or more manufacturing firms so that the bidding will be relatively competitive among qualified organizations.

It is almost mandatory that specifications for laboratory equipment be separated from the general contract, or at least demarcated in such a way that there is a clear, comprehensive, and accurate statement of what is wanted.

Specifications, in discussing scope of the work, should state clearly both what is wanted and what is not wanted and, depending on the nature of the project, the bidders should be requested to submit samples, with their proposals, of top materials, construction details, hardware, plumbing, electrical fixtures, and finish swatches or panels. These various samples are to be used primarily for testing as well as to determine that they meet the specifications in other ways. It is most important that the finish of tops and other surfaces withstand the corrosive action of reagents and fumes.

Bidders must be required to state their qualifications and to list their facilities to be certain that they can adequately fulfill the contract. They may also be required to submit a list of similar laboratories which they have installed and perhaps a statement to show that they are financially able to take on the contract. A one-year guarantee on materials and workmanship should be required.

The specifications should require that the contractor submit for approval dimensioned laboratory-furniture drawings with roughing-in dimensions, shop drawings, and installation drawings. This is particularly important where custom furniture is involved.

The specifications should cover not only the equipment and its installation, but the construction details as well, so that the work of the general contractor and the equipment contractor is clearly stated and each knows the scope of the work to be undertaken by the other. It is generally recommended that the furnishing of all service and waste lines and their connection to fixtures and traps, and the pulling and connection of wires to electric fixtures be included in the general contract so the responsibility for this work will not be divided.

It is only through careful and complete preliminary work of this type that the detailed planning done by the architect and the co-ordination carried out by the general contractor will create the laboratory which meets the owner's wants and needs. The laboratories in the accompanying illustrations show the many values of a close co-operation between all concerned in developing a modern technical laboratory—the owner, architect, contractor, and the manufacturer of the specialized laboratory equipment.

our architectural heritage

Newest of P/A editorial features begins with this issue (*acrosspage*) as announced in June. The series, documenting the significant contributions made to development of architectural form and meaning in the United States over the past 300 years, will consist of two-page and four-page monographs prepared for our architectural audience by Ada Louise Huxtable, architectural historian and experienced research authority, with advice and assistance of The Society of Architectural Historians.

The wide range of our architectural heritage will be examined through random sampling by Mrs. Huxtable in her research—supplemented by the specialized assistance of architectural historians and P/A readers, many of whom have already offered suggestions, possible subjects, and rare data—though the monographs will not appear chronologically or by categories, since thorough research does not fall into any such continuous pattern. The Cleveland Arcade, chosen to initiate the series, illustrates the style of plate presentation and the spirit of PROGRESSIVE ARCHITECTURE IN AMERICA as described by Mrs. Huxtable:

"The growth of the United States as a nation reflects a period of transition unparalleled in the history of man, unprecedented in its influence on his environment and way of life. American architecture, in its brief 300-year span, records this transformation to an amazing degree. Despite lip service to Europe and the popularity of revived styles, it is vital, original, experimental. To the extent that American building has utilized the discoveries and inventions of the Industrial Age that are its birthright, progressive architecture in America is a story of particular significance. To the degree that it has contributed creative solutions to the sociological problems of our time—in terms of imagination, ingenuity, and high standards of design—it is a story of greatness."

We hope that P/A readers will enjoy this series, learn of many interesting achievements of their professional forebears, and nurture increased respect for our architectural progress. All are invited to join in calling attention to the buildings of their own localities which merit inclusion in this continuing documentation. THE EDITORS

Cleveland Public Library

During preparation of the brief monographs comprising PROGRESSIVE ARCHITECTURE IN AMERICA, *Ada Louise Huxtable has discovered that the fruits of research not infrequently exceed expectations—as well as space for presentation. Assembling data and illustrative material on The Cleveland Arcade, for instance, Mrs. Huxtable found it notable politically as well as structurally when the files revealed a yellowed illustration titled, "National Convention of Republican Clubs Banqueting in Cleveland Arcade, June, 1895." This event was attended by 2000 delegates and their friends, whose reply to the Democratic battle-cry, "Free Silver and Sixteen-to-One," was "The Full Dinner Pail and The Gold Standard." Notables there included Governor McKinley and Senator Hanna. "Other thousands viewed the brilliant, flashing scene from the galleries." The then-new Arcade was proudly described as "warm in winter, cool and shadeful in summer."*

PROGRESSIVE ARCHITECTURE IN AMERICA

THE CLEVELAND ARCADE—1888-90
Cleveland, Ohio
John M. Eisenmann, George H. Smith, Architects

Cleveland Arcade Corp.

Lanier Campbell Greer

Cleveland Arcade Corp.

Industry and transportation created the 19th Century American city; commerce and technology built its monuments. Its palaces of iron were dedicated to trade. Although many of these structures have made way for the modern skyscraper, the Arcade Building in Cleveland still stands, offering an opportunity to study the genre at first hand.

The Arcade typifies two of the most important architectural trends of the 19th Century: the development of the commercial building and the evolution of the metal frame. Progress in iron construction was one of the period's most dramatic advances. As early as 1858, Henry Van Brunt had observed to the AIA, "This is the Iron Age—for no other material is so omnipresent in all the arts of utility. . . ." By the end of the century, spectacular structural strides in iron and steel had made possible the spanning of spaces and enclosures of unprecedented size: bridges, train sheds, exhibition halls, and business buildings were constructed on a scale that had existed previously only in men's dreams.

Such a building was the Cleveland Arcade. A late, full-blown product of the Iron Age rather than one of its pioneering experiments (the magnificent Galleria Vittorio Emmanuele had been built in Milan more than twenty years before) this commercial Arcade is a particularly noteworthy example of the architectural philosophy and practice of its day. The exposed iron framing, still something of a novelty, was exploited for its psychological and esthetic effect as well as for its structural advantages; the display of conspicuous size and technical innovation served as a visual measure of the growing prestige of the commercial community. Characteristically, the building's organizers included such figures of finance as Myron T. Herrick, John D. Rockefeller, and L. V. Harkness.

Construction is of cast and wrought iron, some structural steel, and masonry bearing walls. Interior cast-iron columns are carried on floating spread foundations in quicksand and sandy soil, and the exterior masonry walls receive the lateral thrust of the large wrought-iron ceiling trusses. The court measures approximately 300 feet long, 60 feet wide, and 100 feet high, providing space for five tiers of offices and shops. Including the ten-story masonry office structures at either end, the full depth of the building is 378 feet, with frontages of 132 feet on Euclid Avenue and 180 feet on Superior Avenue (*illustrated*). These exterior façades are of dark, Anderson, pressed brick and Pennsylvania red sandstone in the then-popular "Byzantine-Romanesque" style. The original fireproofing consisted of porous terra cotta tiles for office partitions, mineral wool between partitions and floors.

It is significant that no ordinary contractor would take the job of the iron framing and that the Detroit Bridge Company executed the work. Bridge engineers played an important role in the development of metal construction for architecture, since their practical experience supplied much of the limited proved knowledge of the properties of iron and steel. Because standard tests and specifications were still in the future, each new design was in the nature of an individual experiment, based on theoretical calculations. There was considerable fear, in the case of the Arcade, that the lack of cross bracing would lead to the collapse of the roof and a pushing-out of the walls. This thrust was compensated for by diagonal or lattice bracing, similar to present-day wind bracing, between the vertical columns supporting the roof.

The iron framing was originally painted in "bright, agreeable colors" and the fanciful, foliated "gryphons" of the top story had white teeth, red tongue and gums, and blue eyes, which must have been an awesome sight in the light of the incandescent burners that they carried in their mouths. According to a contemporary account, the Arcade was built "pursuant to the most modern methods. . . . The quality of the castings was highly superior, the framing thoroughly and accurately connected and the whole erected promptly and, despite the hazard that usually attends such undertakings, without accident of any kind."

ADA LOUISE HUXTABLE

Special information and reference material: Lanier Campbell Greer; Cleveland Arcade Corporation: Western Reserve Historical Society; Cleveland Public Library.

"Nobody has a title," says Butterfield of the N&B staff: (standing) *Robert Liebreich; Richard D. Butterfield; Christopher Winsor;* (seated) *Raymond Wisniewski; Bryce Roberts; Norman Douttiel; Iulian Elias.*

fields of practice: school design

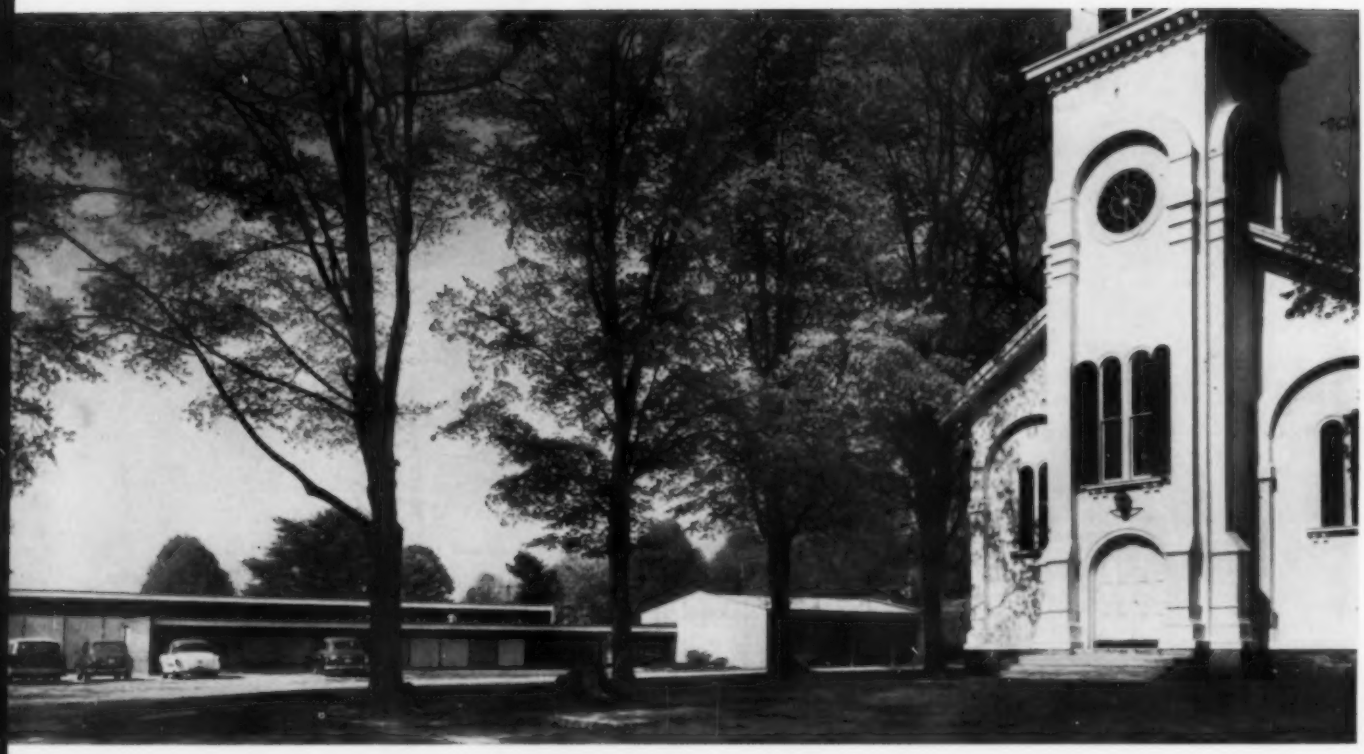
Nichols & Butterfield, Architects

Since World War II, readers of architectural and educational magazines have been increasingly aware of the firm of Nichols & Butterfield, of West Hartford, Connecticut, as architects of school buildings. In the firm's brief span of seven years, the New England countryside has been dotted with some fifteen new Nichols & Butterfield schools, plus at least as many additions to existing plants. In this latest of our continuing series of studies of progressive firms that specialize in one design field (in the case of Nichols & Butterfield, schools account for about 95 percent of work), we will discuss the background of this successful practice and related matters.

Tragedy attended the firm's founding, with the death of John Nichols, one of the partners, just a few months after the partnership was established. Many of his school-planning studies and theories have been—and continue to be—major factors in the firm's approach to design. Nichols had spent nearly eleven years as Supervisor of School Buildings and Plans for the Connecticut State Department of Education and had done extensive school survey and consulting work. Richard Butterfield, who now heads the office, is the first to credit Nichols with a large share of the firm's performance and progress. P/A's readers may recall that this young firm, in two of the three Annual Design Awards Programs we have conducted, walked off with Award Citations.

Butterfield, too, had an exceptional background for the conduct of a school-design practice. His father served as Commissioner of Education, first in New Hampshire; later, in Connecticut. His father-in-law was Superintendent of Schools in several large communities and ended his active professional career as Professor of Education at Dartmouth College.

After graduation from Dartmouth in 1930, Butterfield worked for J. Fredrick Larson, a college-planning specialist. He then attended Yale, receiving his B.F.A. Degree there in 1934. Subsequently, he worked in a number of small offices, in Massachusetts and Connecticut, and (1939) hung out his shingle in Hanover, New Hampshire, where he accomplished some residential work and two recreation buildings. After war work in the machine-tool industry, up went his shingle again—this time, in Perkins-



Photos: Louis Reens

ville, Vermont, where "for five years, I operated the smallest, most pleasant and hardest-working rustic office that you could imagine." Butterfield's close personal association with professional educators gives the firm an exceptional and highly knowledgeable "in" with School Boards, Superintendents, and others concerned with the commissioning of school buildings: "We find that we understand professional educators better than many architects do." He firmly believes, "the best schools stem from a Superintendent with leadership and vision who can convince the committees that all schools and all architects are not alike."

As the schools shown in this study reveal, there is extreme variation in the size of Nichols & Butterfield jobs. A by-product of such a practice is that the tiny job (seldom a money-maker) can and sometimes does lead to later major commissions. Money-making as such? "We know it can be easily done by using the same old details year after year," Butterfield comments. However, "for better or worse, there seems to be very little about our buildings to identify them as 'N&B' to the casual observer." In going before school-building committees, he makes a point of having the firm appear as advisors and *never* as architects who attempt to "sell" a predetermined type of scheme.

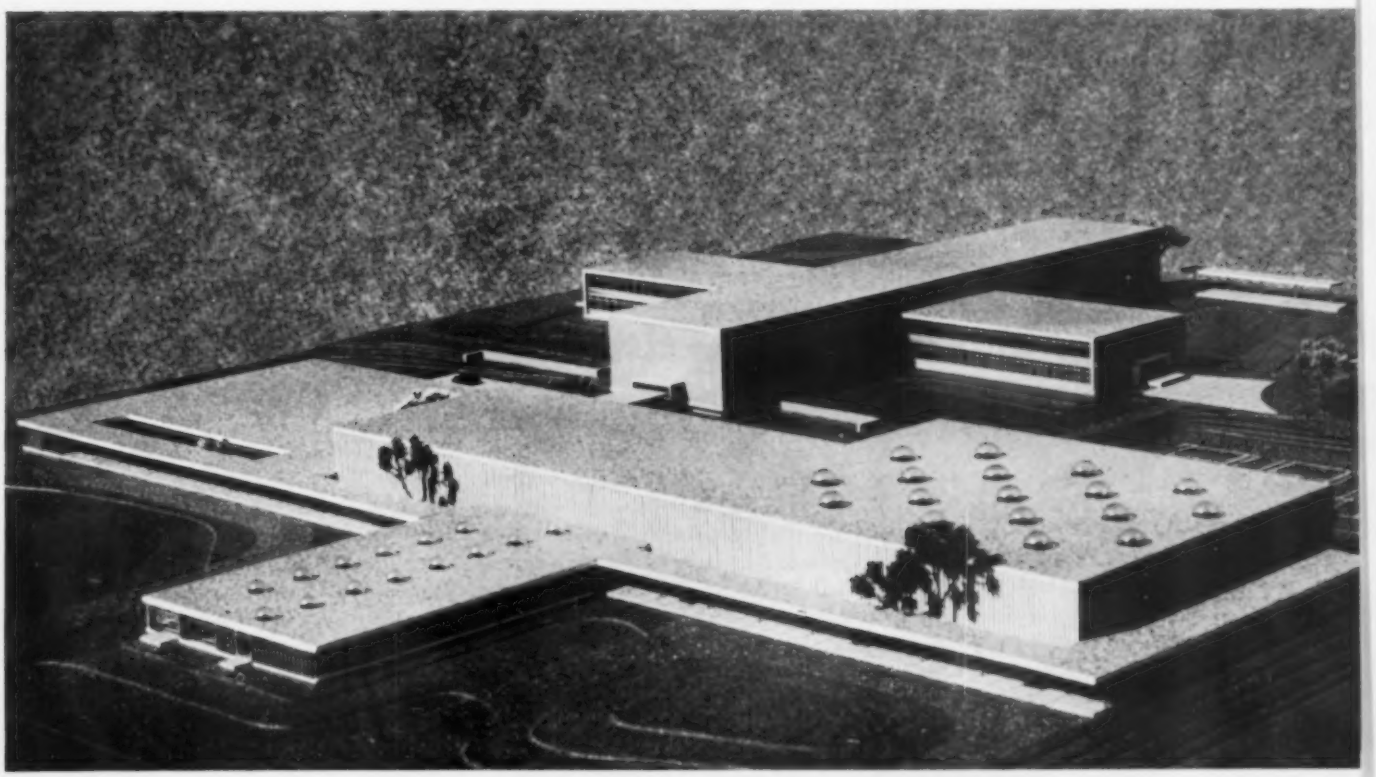
Butterfield likes to emphasize the firm's good fortune in having a top-flight engineering firm—Marchant & Minges—located just across the street from N&B's offices. "They realize, as we do, that structural and mechanical

systems are continually changing, and they are quite willing to compare several systems on any given project."

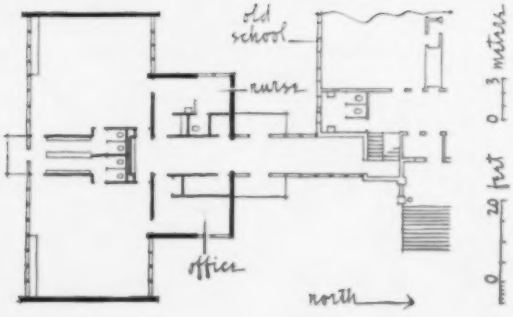
As with any progressive firm, the problem frequently arises as to how far to let designers go with untried ideas, or (on the other hand) how much to allow the old-time teachers to dictate architectural decisions. "Many of the previously untried ideas pay off," he maintains. "But there are others that either turn out to be very bad, or the school people steadfastly and stupidly refuse to use them to their own advantage. For instance, in the design of a school library, the idea of placing all stacks in the center of the room, allowing full-height windows on two exterior walls, met the worst kind of reception. Our advisor at the State level said it couldn't be done, but as soon as we showed the idea in graphic form, she fell for it completely. The librarian of the school resigned a year early so that she would not have to use this room! I believe it is one of the most successful rooms we have ever created."

As now constituted, there are eight persons on the Nichols & Butterfield staff. The setup is that of one principal and several associates. "We have found that this arrangement must be flexible enough so that associates can be added or subtracted. I wish to keep the office relatively small—the maximum, about 12—so that I can keep in personal touch with all designs and construction. I find that the best way to keep this contact is by writing the specifications myself, headache though this may be." He tries to give each man in the office maximum responsibilty and opportunity to develop. "An advantage of an office of this size is that the man has a chance to see a project from design stage to working drawings," he points out, "and to completion, through frequent field trips."

New work from the boards of N&B ranges from the four-classroom New Preston Elementary School, Washington, Connecticut (acrosspage), *to a 1700-student high school now being built in West Hartford* (below).



school design: Nichols & Butterfield

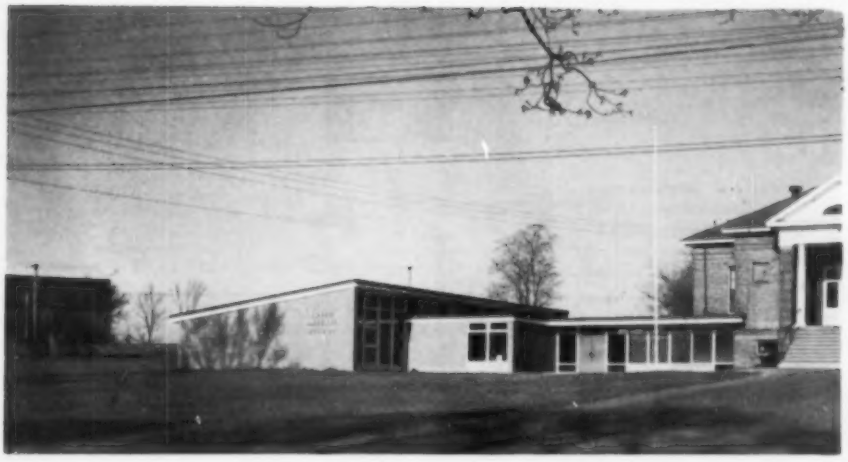


Amherst, Massachusetts—elementary-school addition

In expanding the South Amherst Elementary School, the architects were faced with the problem of adding two modern classrooms (with office, health room, and toilets) to an existing, two-classroom school building of redoubtable design and sturdy construction. The spacious site faces the Common of the rural community. The design approach was to provide a decent separation between the old and new units, yet link them in such a way that a unified total would result. Similar finish materials and colors tend further to blend the disparate elements.

The building has a steel frame (lally columns and beams), with bearing end walls of brick masonry; backup walls are of cinder block. The roof consists of wood joists on the steel beams and built-up surface. Because of the small size of the addition, the school is exceptional in having bilaterally lighted classrooms spanning the full depth of the building, yet no exterior corridors. Toward the south, low windows control sun; to the north, windows are full height.

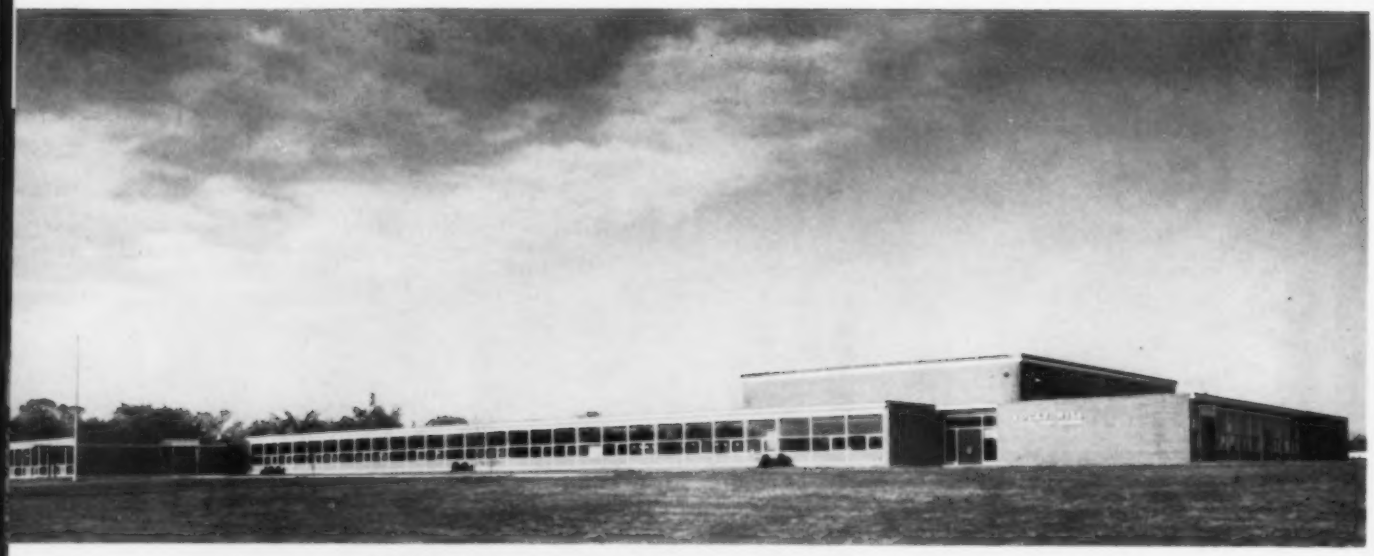
Flooring is asphalt tile; ceilings are finished with acoustical tile. Heating, ventilating, and electric-distribution systems are all extensions of existing installations. Cost, including all built-in equipment, but excluding site and drainage work and alterations to the old building, came to $12.75 per sq ft. Marchant & Minges, Engineers; Philip E. Shumway, General Contractor.



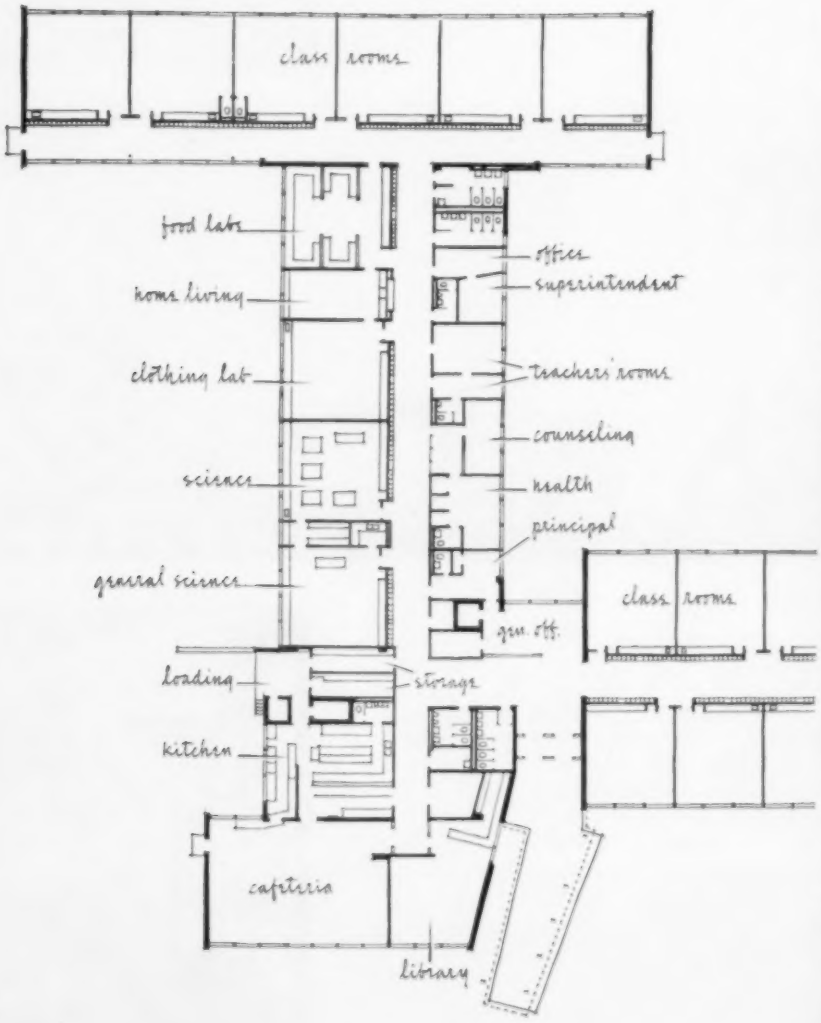
Suspended fluorescent fixtures provide artificial lighting in the classrooms (above).

Child-scaled storage bins, work counter, and sink (bottom) *occupy a niche in each room.*

school design: Nichols & Butterfield



Rocky Hill, Connecticut—junior high school



The gymnasium serves as a buffer zone between classrooms and workshops.

The elementary classroom wing (right) *faces away from the rest of the school.*

The steel-framed entrance canopy (below, top) *leads to the main lobby and school office* (bottom).

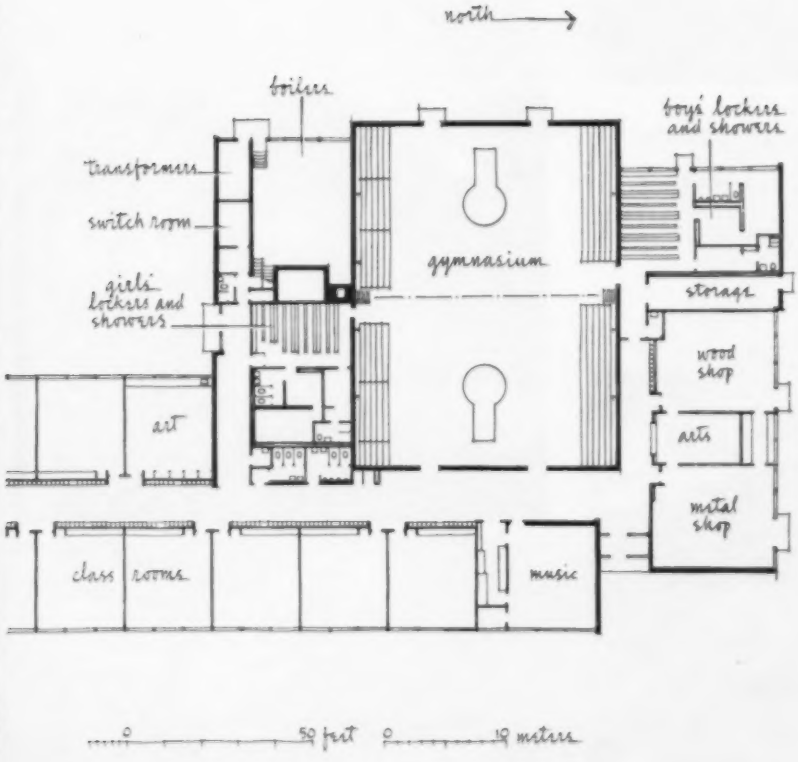
Winner of an Award Citation in P/A's Design Awards Program in 1954, the 400-student Rocky Hill Junior High School contains six elementary classrooms in addition to fourteen academic rooms. The two parts of the school (and their playgrounds) are separated by a centrally placed element that contains such common-use rooms as school library, cafeteria, and offices.

Actually, the present school is at an interim stage and, when present tuition arrangements with a neighboring town expire, will be expanded and converted into a Junior-Senior High School. Classrooms will be added around the court, and an auditorium and new art and music rooms will be constructed at the northeast corner of the present building. The major design problem, the architect tells us, was "to fit the space requirements into a too-limited budget that was established before the program was written or the architect selected."

The building is framed in steel, using open-web bar joists and steel roof decking. Exterior walls are of brick, wood window walls with colorfully painted panels, and aluminum sash. Back-up walls are cinder block. Floorings include asphalt and vinyl-plastic tile.

Heating and ventilating are combined in a glass-fiber-insulated, double-duct system equipped with individual room controls. Fluorescent units light all instructional areas, while incandescent fixtures are used elsewhere.

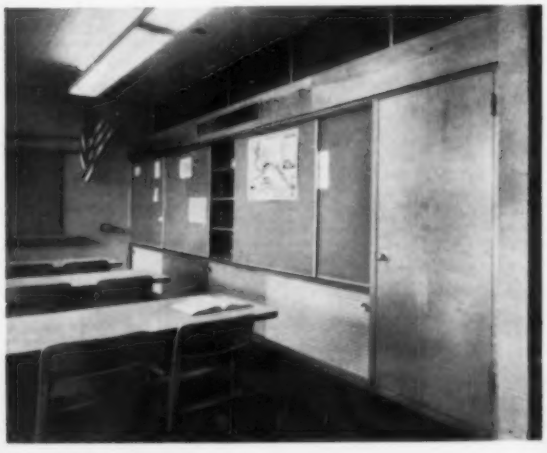
Cost came to $13.75 per sq ft including all built-in equipment but excluding site work and sanitary system. Marchant & Minges, Engineers; The G. S. Jones Company, General Contractor.

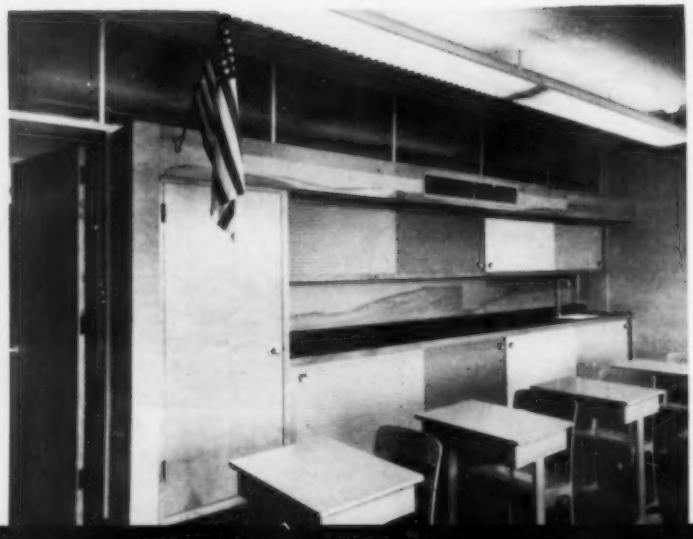


school design: Nichols & Butterfield

In the locker-lined corridors, continuous bands of wire glass extend between locker tops and ceiling. In typical classrooms (left), *window walls are framed in wood; partitions are painted cinder block. Ceilings are surfaced with acoustical tile.*

Varying types of storage units back up the banks of corridor lockers. In some rooms, sliding tackboard panels (below) *serve as doors to shelving. In others* (bottom), *a work counter and sink occur between storage cabinets below and above. Even in black-and-white photographs, use of color is evident.*





Rocky Hill, Connecticut—junior high school

The large gymnasium is divided into boys' and girls' gyms by means of folding, sliding doors.

Windows in the centrally placed graphic arts room provide supervision for both wood shop and metal shop (right).

The clothing laboratory (below) *occurs in the wing joining elementary and academic areas.*

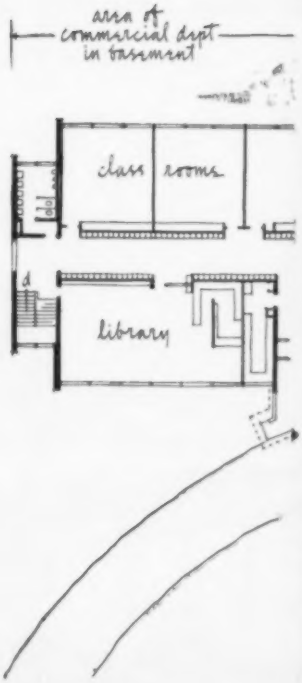
school design: Nichols & Butterfield

Litchfield, Connecticut—regional high school

The Wamogo Regional High School (the curious name Wamogo deriving from the first letters of the three rural towns it serves—Warren, Morris, and Goshen) is disposed on a magnificent, 35-acre hill-top tract with views to east, south, and west. The design wish, which seems happily realized, was "to place an informal plan gracefully on the sloping site, focusing such areas as cafeteria, library, and offices onto the best vistas."

In order to come within a very limited budget, the cafeteria doubles as the assembly room, and the stage is used as the music room. An exceptional provision is a sizable department for instruction in vocational agriculture. Following the site contour, a lower floor occurs under the end of the south wing and contains three conventional classrooms and two rooms for business and commercial instruction.

The building utilizes both concrete and steel columns and has flat-slab floors and roof. Gym and cafeteria areas have rigid steel frames, and a "shredded wheat" type structural decking is used for sound control. Individual room controls govern a double-duct, combined heating-and-ventilating system. Window walls are wood framed, with aluminum operable panels. Continuous fenestration is used wherever possible; in the south wall of the gym directional glass blocks are used, while plastic sky domes light the kitchen. Cost of the building, including all built-in equipment but excluding site work and sanitary system was $13.50 per sq ft. Marchant & Minges were Engineers; The New England General Contracting Company, General Contractor.



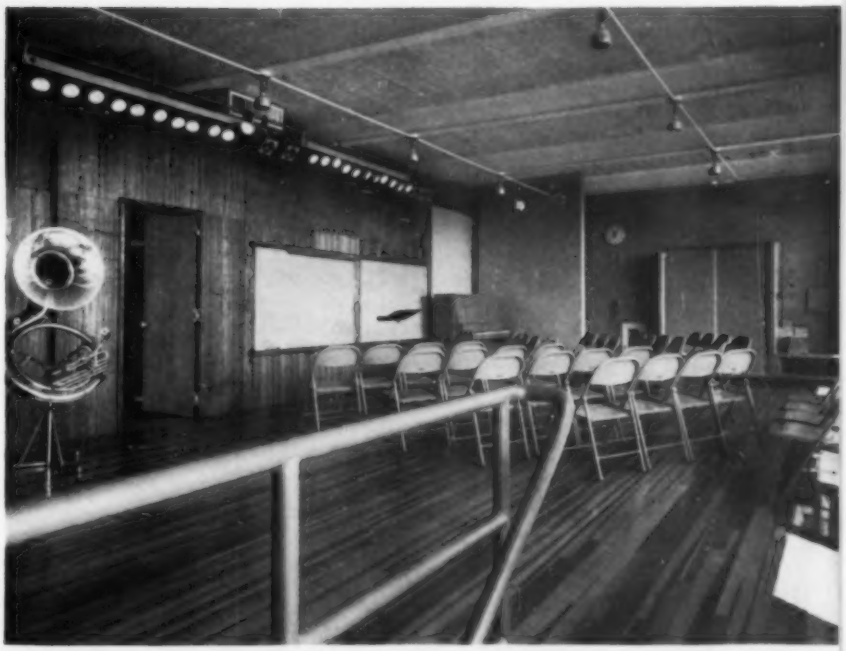
Sheltered, bus-loading walks lead both to the main lobby, the offices, and classroom corridor.

The commercial and office practice rooms (top) *occur on the lower floor. Asphalt tile is the flooring in all instructional areas.*

The library (left) *has wall-to-wall windows and colorful display panels. As in the classrooms, acoustical tile is the ceiling finish.*

In the waiting room of the main office (below) *is an electronic sound system, including switchboard, speakers, and phones.*

Litchfield, Connecticut—regional high school



The cafeteria/assembly hall (above) *is equipped with a stage which, with sliding panels pulled across, serves as the music room* (right).

Both the gym (bottom) *and cafeteria elements are framed with rigid steel bents. End walls are of brick outside; cinder block, within.*

Does concentration of work in a school-design Field of Practice stultify creative imagination? Richard Butterfield says: "The boys in the office occasionally seem restless . . . but then they find that each school is different . . . and discussions of new ideas advanced by the younger men highlight our regular, informal staff meetings."

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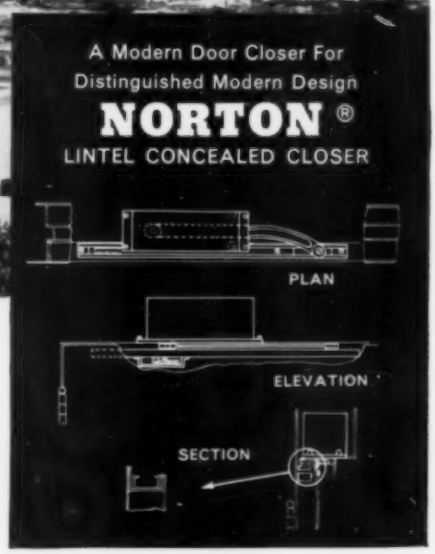


by Ben John Small

spec small talk

"P" Pricer

If you do residential work, I think you will enjoy thumbing through Pease Woodwork Co.'s *Pease Pricer No. 326 for '56.* They are in Cincinnati, Ohio. This handy little booklet is well illustrated and lists sizes and prices of hundreds of construction items. I found it most informative—and am certain you will, too.

curtains

What's going on with this curtain-wall business? Some of the examples I have seen recently have been just plain miserable, from design and construction points of view. Metals are too, too thin and tin-canny, buckling with every breeze. The calking goo does not caulk, thereby converting curtain walls into wailing walls. Stains, poor alignment, inadequate provision for expansion and contraction, poor s o u n d-deadening against rain and wind, poor internal ventilation and drainage are some other annoying bugs. We have come a long way in masonry know-how. Why do we ignore this knowledge in making the transition from masonry to metal? Curtain-wall manufacturers should cook up a performance specification, if only to straighten out, among other things, a little item like their "Work Not Included" recommendations. For example, listen to this: Manufacturer "A" says, in effect, that he does not furnish structural steel, back-up walls, convector covers, metal stools, glazing materials (except continuous glazing bead), glazing, finish calking, wall cleaning after erection and preparation for attachment of mullion anchoring clips (this refers to punching structural steel and to installing inserts in concrete).

Manufacturer "B" excludes only structural-steel supports, eave flashings and sash-girt flashings.

Manufacturer "C" excludes only structural-steel supports and all field painting.

Manufacturer "D" suggests to the specifier three choices as follows: "All fastening materials shall be (1) furnished and installed by this contractor, (2) furnished by framing manufacturer and installed by this contractor, (3) furnished and installed by the framing manufacturer."

Manufacturer "E" includes calking and gasketing material, and so on. See what I mean?

I gave this pitch to the Michigan Society of Architects early this year and told the story of my conversation with a leading curtain-wall manufacturer. I asked him "how come" and before we could say "whoinhell designed that panel" he gushed forth with the following:

"Here we are, about the oldest established curtain-wall makers, and suddenly we find ourselves competing with jokers who buy a window here and a panel there and get someone else to do the erection and off they go dividing responsibility all over the lot and stigmatizing our trade as a bunch of opportunists. First thing you know, architects will throw us out as they have other trades where difficulties had become unbearable. No legitimate curtain-wall manufacturer should permit any erection gang to put up his stuff, other than the manufacturer's own trained crews. For true economy, the curtain-wall assembly must be fabricated in its entirety in the manufacturer's plant. Architects should become increasingly aware of the fact that the biggest bugaboo in curtain-wall construction is leaks, first; then—for the erection crews—problems of proper alignment; then, proper allowances for field tolerances to accommodate the inevitable construction inaccuracies; and, then, a thorough recognition that buildings are not static and therefore require ample provision for expansion and contraction in all directions."

In my office on a recent, large, curtain-wall project we called in two reputable manufacturers, made sure we were talking to their technical "low pressure" people, and squeezed their best advice out of them. We think it well to talk to more than one manufacturer just to double-check several approaches to a given problem. On our public and private work, our specifications stress performance objectives not unlike the approach we take in waterproofing specifications. We all know it is foolhardy to specify each and every grunt in a waterproofing system and then blithely require the Contractor to furnish a guarantee.

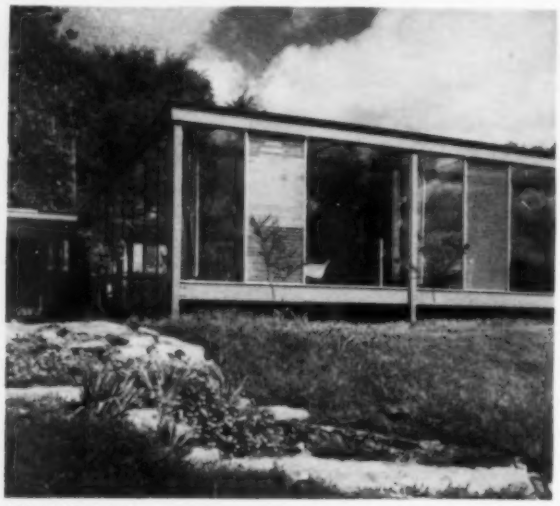
When the shop drawings for our curtain-wall system come in, these are viewed with excitement paralleling a ship launching. We study these to see what is being offered and how well they comply with the requirements of the Contract Documents. The sample examination stage is important, too. We usually take the assembly apart and perform an autopsy that would make a medical examiner beam. Do we take ourselves seriously at this point! The background of the proposed curtain-wall subcontractor is also examined with great care. In the main, we exercise more than reasonable care from birth to "in situ" of the curtain walls, for, if we don't, on this increasing complex phase of practice, it could be curtains for us.

chopping blocks

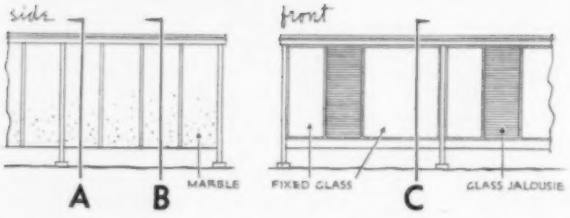
Did you get to notice the inroads being made by Kreolite end-grain, flexible-strip, wood-block flooring made from kiln dried Southern Yellow Pine not over 2″ x 4″ in cross section and assembled in flexible strips 2′-0″ to 8′-0″ long, 1½″ in depth parallel to the grain of the wood and approximately 3½″ in width for use in gymnasiums, et cetera, et cetera (pause for deep breath), question mark. The "what's-new" in the above brief question is the 1½″ depth which makes the product nicely competitive with the kind of flooring you specified the other day in that there new low-cost school. Of course, wood-block flooring in itself is not new. The basic theory of wood-block flooring is actually centuries old. For example, the ancients used the end grain of logs to make "chopping blocks" because the tough end-grain wood absorbed and withstood the heavy blows of hammers and knives without splintering. Many modern butcher shops, both kosher and nonkosher, still use these end-grain chopping blocks. About 1901, end-grain wood blocks were first used for street paving. Their durability indicated they would prove ideal for super-tough flooring in industrial plants. For nearly 50 years, Kreolite has been used successfully in industrial plant areas where heavy traffic would ruin normal floors. The Jennison-Wright Corporation, manufacturer of Kreolite wood-block floors, offers this time-tested principle of end-grain construction as a beautiful, light-colored flooring designed specifically for school activity centers, such as gymnasia, multi-purpose roomsia, vocational shopsia, and laboratoria. This flooring combines the rugged durability of end-grain woods into the mosaiclike beauty of natural-finish continuous-strip flooring. You might like to know that the individual end-grain blocks are bonded into strips by galvanized steel-wire trusses tightly embedded within their sides at right angles to the grain and that the assembled strips are then impregnated with a special pentachlorophenol solution, transparent preservative for moisture protection and that the whole mess is laid in a white adhesive, each strip is interlocked to adjoining strips by steel-wire splines and that you can get more precise dope by looking it up yourself.

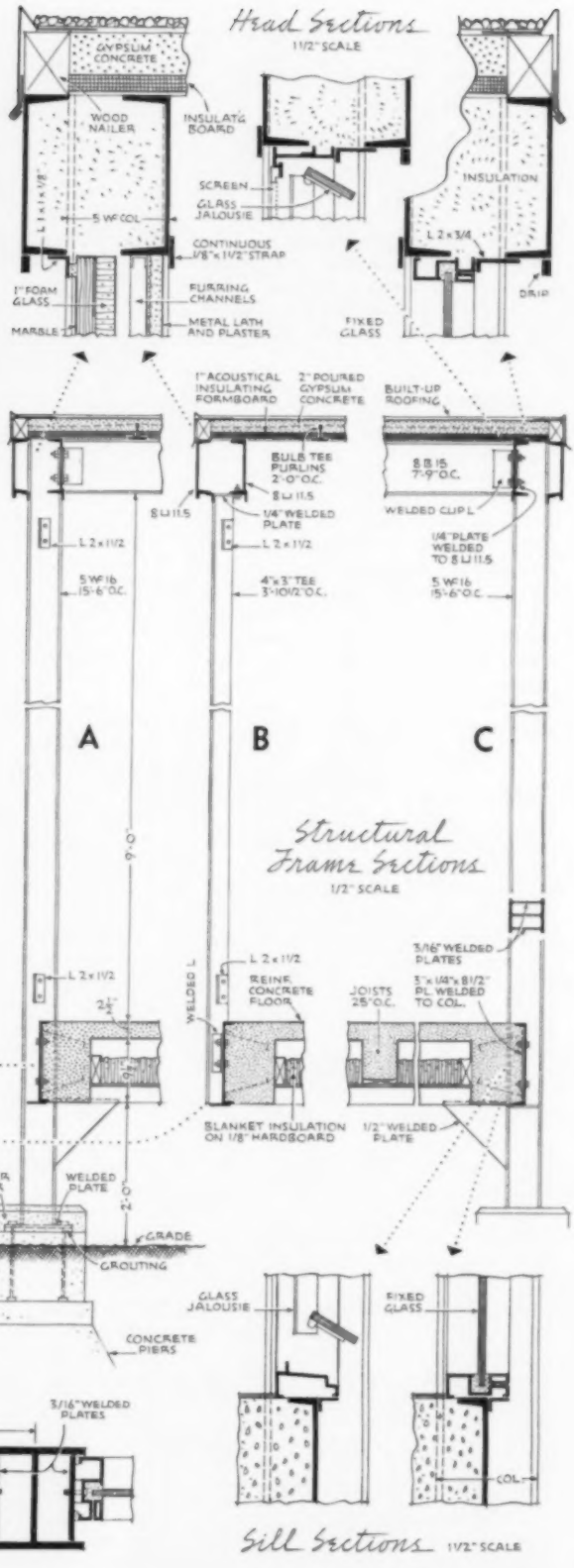
p/a selected detail

window wall



FRANK LOTZ MILLER



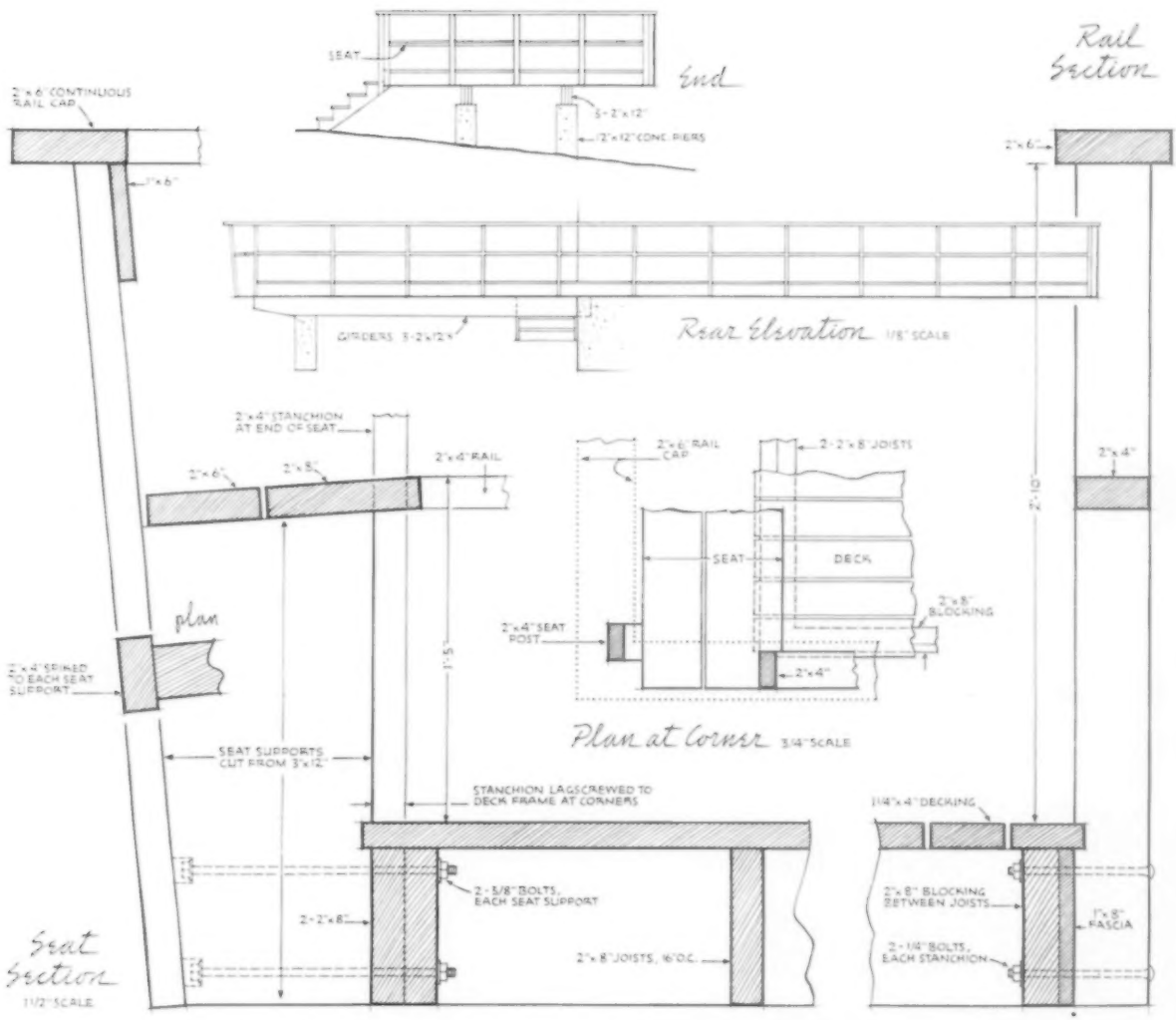


LIBRARY, Natchitoches, La.

Barron, Heinberg & Brocato, Architects

deck railing

LOUIS REEVES



HOUSE, Weston, Conn.

Huson Jackson, Architect

Dramatic effects can be achieved in division of space . . . dramatic for rooms on both sides of a partition. Note how the life and color of this interior are subtly transmitted by the panels of Muralex Glass and the matching SECURIT® Interior Glass Door. Translucent for privacy, plus light. The door is tempered for rough usage. So many design problems work out so well with Patterned Glass by Blue Ridge.

South Bend Federal Savings and Loan Bank
Architect: N. Roy Shambleau, South Bend, Ind.

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Please send me your folder "Blue Ridge SECURIT Interior Glass Doors." I would also like a booklet of ideas for using Blue Ridge *Patterned Glass* in ☐ homes . . . ☐ other buildings. (Check one or both.)

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ADDRESS _____

CITY _____ ZONE _____ STATE _____

advertising agency and architects' office

by Louise Sloane

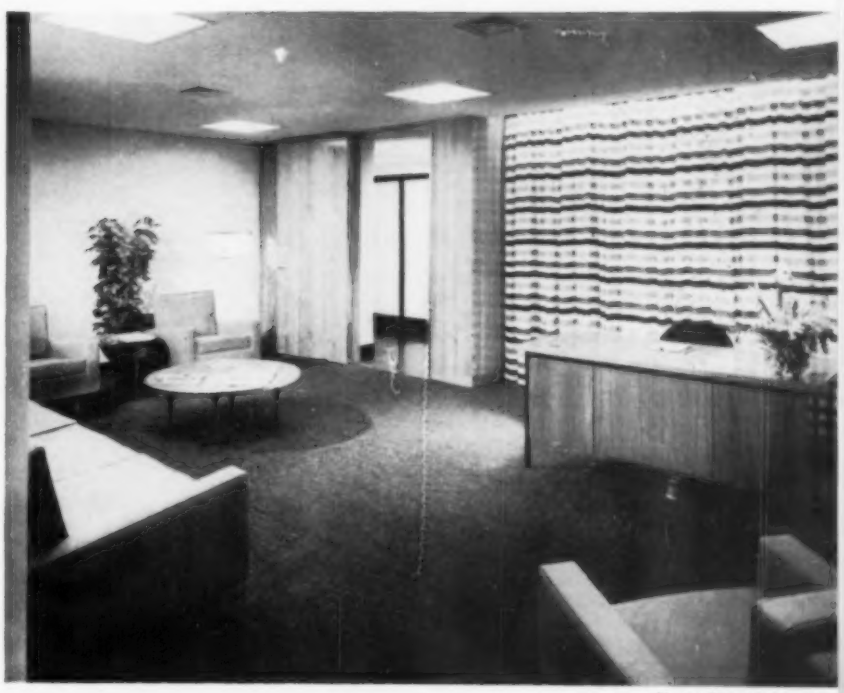
The two office suites that we show this month, solving the problem of complete space planning, are primarily examples of interior architecture, enriched by a genuine concern for the esthetic values of color and texture.

advertising agency

Carson & Lundin's sensitivity to the functional and emotional needs of advertising agency personnel produced the stimulus of high-key colors against a crisp chiarascuro background *(photos here* and *overpage)*. Beginning with the elevator corridor *(right)*, color and design immediately announce that "creativity lives here." Combine olive-green, vinyl-plastic, washable walls; black vinyl floor with white checkering; polished-brass lettering and display framing; narrow cherry-strip paneling; luminous ceiling panels; and planting—and the effect is achieved.

The reception room *(right)* establishes the color theme that prevails throughout the entire suite—black-and-white with vivid color contrasts. In this case, the contrasting colors are red and olive-green, combined in the wall drapery behind the desk. Carpeting throughout is pebbled black and gray. Office backgrounds are gray, with primary colors introduced in the upholstery fabrics, in the metal doors of the partitioned areas, and again in the free-standing columns.

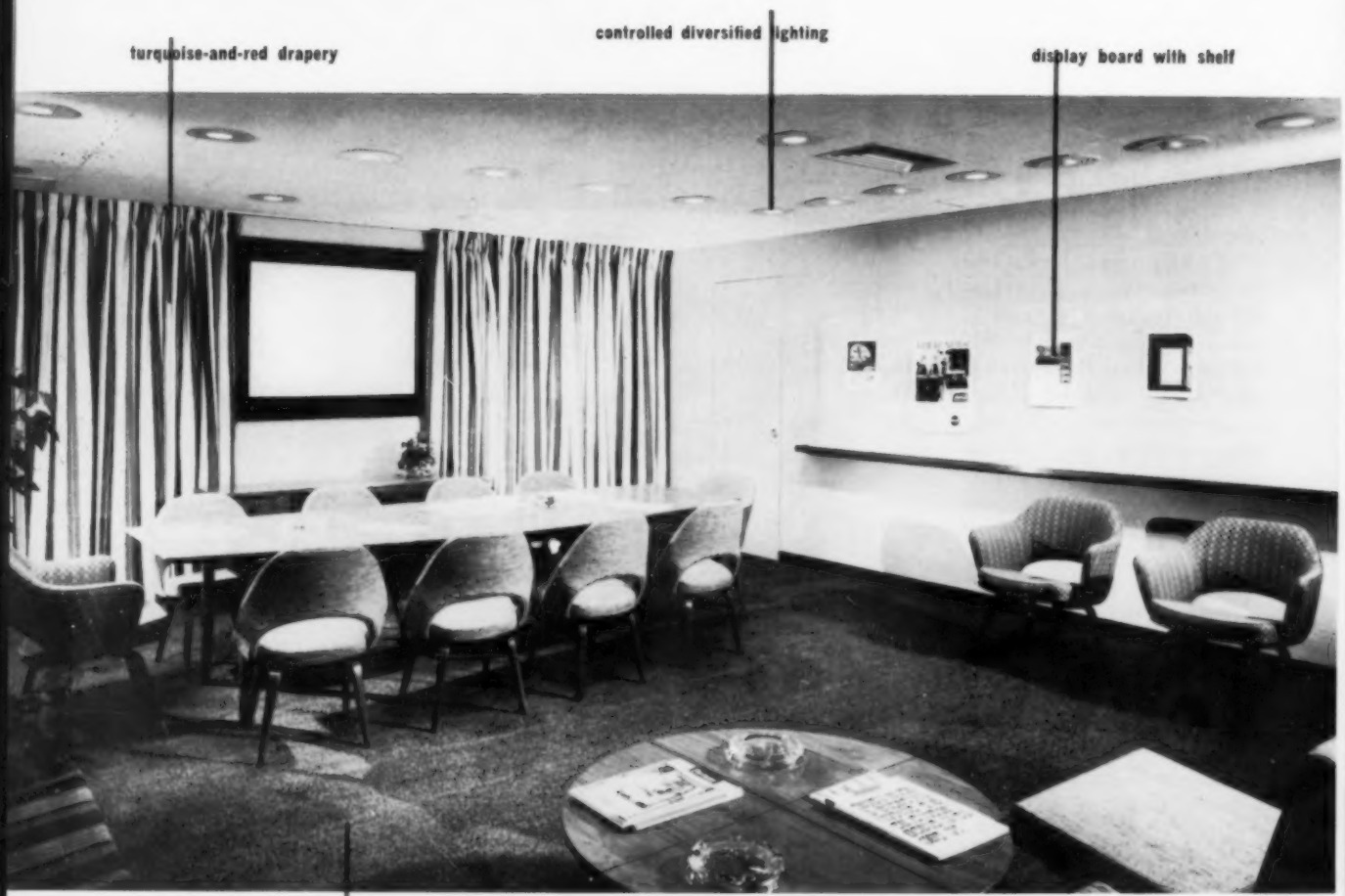
The over-all space layout was designed for maximum effectiveness, employing industrial-engineering principles to keep the total work-load in efficient flow. Equipment — including lighting, air conditioning, and data-processing machines — is planned for maximum employe comfort. Movable partitions allow for relocation without equipment revision.



Photos: Ezra Stoller

client | Marschalk & Pratt Division of McCann-Erickson, Inc.
location | New York, New York
architects | Carson & Lundin

office suites



advertising agency (continued)

Conference room serves also as auditioning studio and screening room. Behind chairs in foreground, out of camera range, is an entire storage wall containing sound and projection equipment. Diversified lighting plan provides controlled lighting for varied uses of room. Red-and-turquoise upholstery and draperies accent black-and-white color scheme.

company executive's office

account executive's office

secretaries' row

data

equipment

Sound: Commercial Radio-Sound Corp., 652 First Ave., New York, N.Y.

furniture, fabrics

Secretarial: metal/ All-Steel Equipment, Inc., 245 John St., Aurora, Ill.

Executive: Knoll Associates, 575 Madison Ave., New York, N.Y.

Upholstery, Drapery: Knoll Associates; Dan Cooper, Inc., 15 E. 53 St., New York, N.Y.

lighting

Luminous Panels: Solux Corp., 58-17 28 Ave., Woodside 77, Long Island, N.Y.

Special Downlites: Gotham Lighting Corp., 3701 31 St., Long Island City, N.Y.

walls, ceiling, flooring

Partitions: metal-and-glass/ 7'-0" high/ movable for maximum flexibility/ white panels, black posts/ unpolished plate glass/ metal doors painted in primary colors/ E. J. Boyle, 575 Fifth Ave., New York, N.Y.

Corridors, Columns: "Vicrtex" linen/ L. E. Carpenter & Co., Inc., 350 Fifth Ave., New York, N.Y.

Ceiling: general areas, "Strla"; special offices, "Textured"/ Fiberglas/ Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo, Ohio.

Carpet in Offices: special order/ Archibald Holmes & Sons, Erie Ave. and K. St., Philadelphia, Pa.

Flooring: "Flexachrome"/ vinyl-asbestos tile/ Flintkote Co., 1232 McKinley Ave., Chicago Heights, Ill.

office suites

client-architects | Copeland, Novak & Israel
location | New York, New York

architects' office

In designing their own office, the architectural firm of Copeland, Novak & Israel felt the need to satisfy the most rigorous standards of functional convenience in planning, and to establish a design character representative of the quality of the firm's work. It was economically necessary to allocate the largest portion of space to the drafting studios (including the interior design department). Consequently, the general office, partners' offices, conference room, and miscellaneous spaces were planned in the most compact manner.

reception area, light persimmon, deep yellow, walnut

The resulting solution is indicative of the firm's conception of fluent interior space. Separate functions are defined and articulated by means of architectural and furnishing elements, to provide well balanced space relationships. Materials chosen and modern principles of illumination give tangibility to the planning ideas.

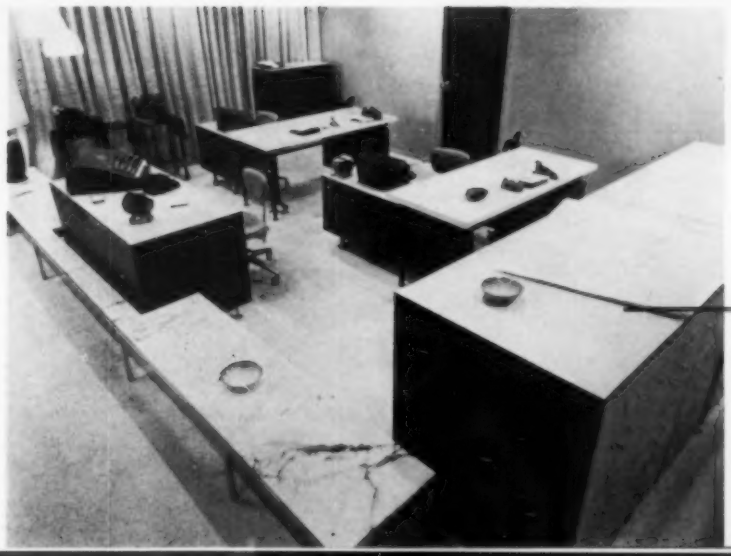
library

contractors' table

conference room, curry-yellow tones

cork tackboard

secretarial area



divider-storage-work surface

office suites

architects' office (continued)

drafting area

beige walls

beige-and-white vinyl tile

Novak's office

data

Color Plan: The reception area in white plus bright, exciting colors reflects the busy quality of this office doing contemporary work. The principals' offices are color-planned to suit each occupant's personality: Copeland's office in white, turquoise, and black; Novak's office in warm-beige and persimmon with black accents; Israel's office in white and Air Force blue, with natural-wood tones. In the conference room, tones of curry yellow are used in a cheerful and relaxing monochromatic scheme. The drafting area has medium color values, to avoid hard reflective light on drawing boards. Spots of brilliant color are introduced throughout, in contrast with natural-beige tones of walls and floor, to relieve eye fatigue.

cabinetwork

All: Hinzmann & Waldmann, 80 Third St., Brooklyn, N.Y.; Brooklyn Cabinetwork Corp., 391 Leonard St., Brooklyn, N.Y.; Carmel Construction Co., 582 Union Ave., Brooklyn, N.Y.; Sivakoff & Minor, Inc., 581 Broadway, New York, N.Y.

windows

Roll-Up Shades: white matchstick bamboo/ Windowcraft, Inc., 104 E. 52 St., New York, N.Y.

furniture, fabrics

Chairs: principals' offices, conference room, at contractors' table/ J. G. Furniture Co., Inc., 543 Madison Ave., New York, N.Y.

Secretaries' and Receptionist's Chairs: Knoll Associates, Inc., 575 Madison Ave., New York, N.Y.

All Other Chairs: designed by Copeland, Novak & Israel/ custom built.

Upholstery Fabrics: chairs in "Naugahyde"/ U. S. Rubber Co., Naugatuck, Conn.; settees in texture, linen/ Jack Lenor Larsen, 60 E. 58 St., New York, N.Y.; settee in kerry linen/ Knoll Textiles, Inc., 575 Madison Ave., New York, N.Y.

Drapery Fabrics: reception area, "Sesame"; Copeland's office, "Conifer Tree"; Novak's office, "Lineal"; Israel's office, "Buttony"/ Jack Lenor Larsen; conference room, "Lazy Lines"/ Knoll Textiles, Inc.

lighting

All: Gotham Lighting Corporation, 37-01 31 St., Long Island City, N.Y.

walls, ceiling, flooring

Walls: painted plaster.
Ceiling: "Celotone"/ Celotex Corporation, 120 S. LaSalle St., Chicago, Ill.

Floor: reception, drafting areas/ "Lifetime Vinyl Tile"/ Robbins Floor Products, Inc., Tuscumbia, Ala.

Carpet: offices and conference room, "Algiers"/ Firth Carpet Co., 295 Fifth Ave., New York, N.Y.; "Tri-Twist"/ The Magee Carpet Co., 295 Fifth Ave., New York, N.Y.; "Braeburn"/ A. & M. Karagheusian Inc., 295 Fifth Ave., New York, N.Y.

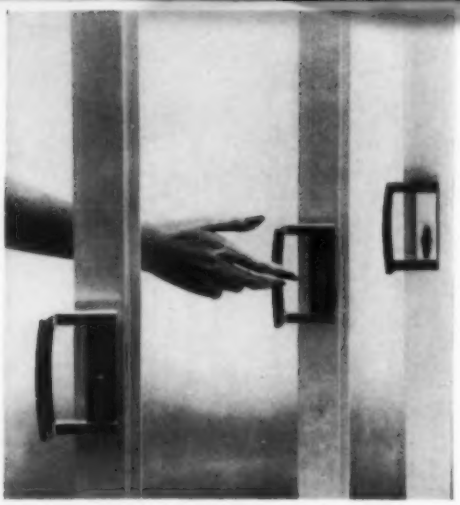
accessories

Lamps, Vases, Ashtrays: Design Technics, 4 E. 52 St., New York, N.Y.

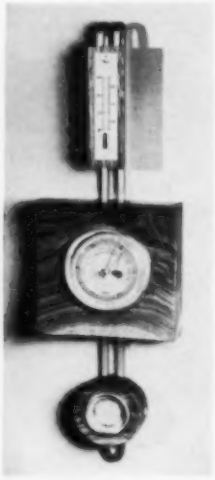
Planters: Architectural Pottery, Los Angeles, Calif.

Israel's office

p/a interior design products

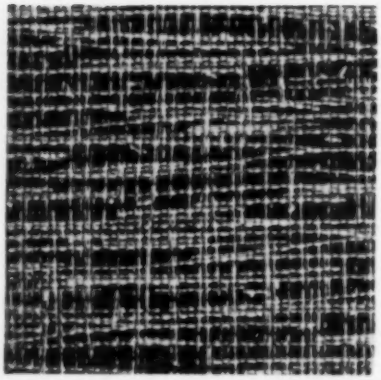


Pendant Barometer: "Wilshire"/ includes barometer, thermometer, humidity indicator/ hand-rubbed walnut cases, brass-finished metal loop mounting/ "Stormoguide" dial forecasts weather/ instrument accuracy assured with altitude adjustments up to 3500 ft/ **retail:** $27.50/ **Taylor Instrument Companies, 95 Ames St., Rochester 1, N.Y.**



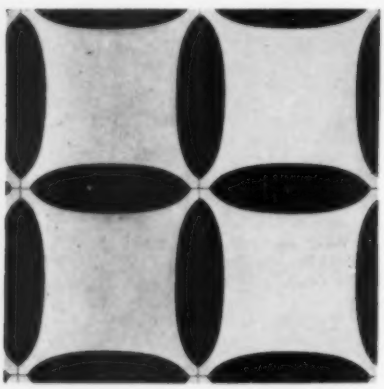
Sliding-Door Hardware: new design based on survey preferences/ in three finishes most frequently requested for architectural correlation: dull chrome, dull bronze, dull black/ made of "Zamak #5" zinc alloy/ patented latch mechanism, all parts cadmium-plated, tamper-protected/ jam-proof spring-lock latch/ designed by Merendino-Greene, exclusively for **Arcadia Metal Products, 801 S. Acacia Ave., Fullerton, Calif.**

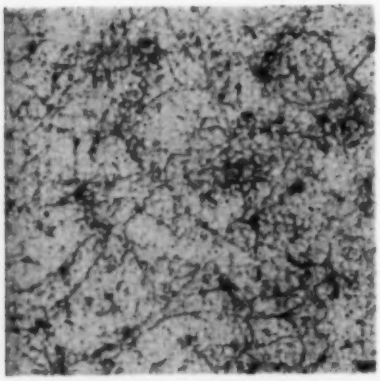
Three-Dimensional Fabrics: "Niagara"/ two-color print with deep embossing/ available in pink, yellow, coral, charcoal, aqua, turquoise, red, green, willow, gold, black, silver black, off-white, natural/ **Textileather Division, The General Tire & Rubber Co., Toledo 3, Ohio.**



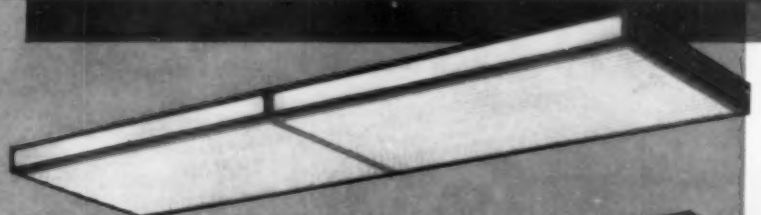
Pre-Cut Vinyl Tile: "Amtico Customotifs"/ 9"x9" tile pre-cut into five separate pieces of tile for easy design variations from same basic tile/ black or white, special colors on special order/ 1/8" or .080" gage/ **American Biltrite Rubber Co., Trenton, N. J.**

Institutional Wall Covering: "Shadowlines Kalistron"/ new patterned treatment on durable vinyl wall covering material/ random tracing of fine lines in black on Cloud White, Sea Green, Champagne, Dutch Blue, Desert Mauve, Lime/ scratch- scuff- waterstain-resistant for use where exceptional resistance to wear and abrasion are required/ **United States Plywood Corp., Flexible Materials Division, 55 W. 44 St., New York, N.Y.**

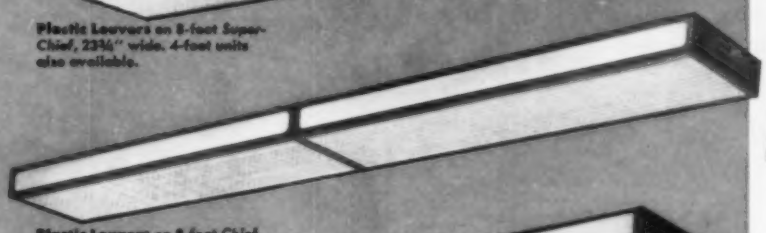




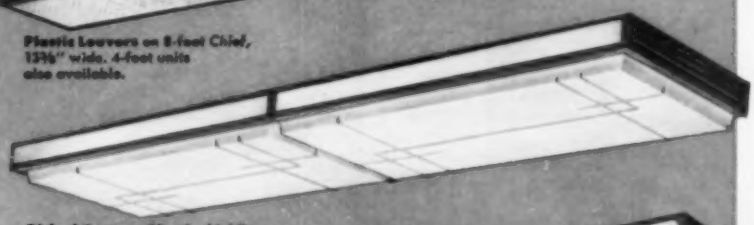
For complete flexibility in lighting design . . .



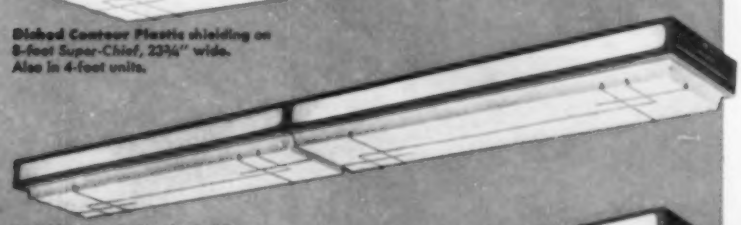
Plastic Louvers on 8-foot Super-Chief, 23¾" wide. 4-foot units also available.



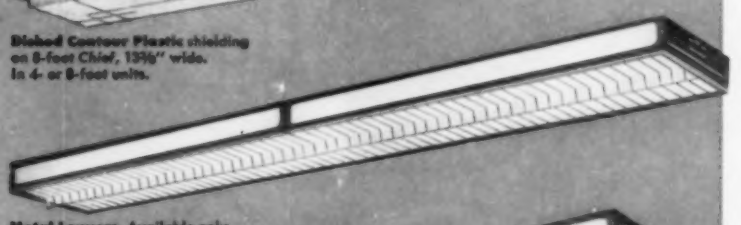
Plastic Louvers on 8-foot Chief, 13⅜" wide. 4-foot units also available.



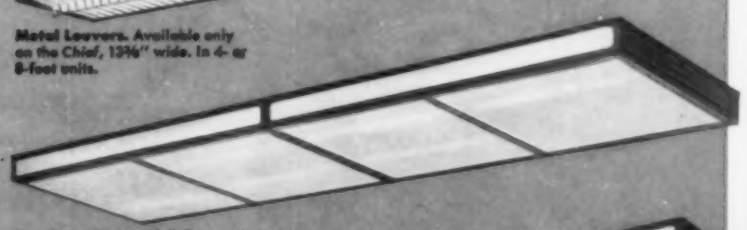
Dished Contour Plastic shielding on 8-foot Super-Chief, 23¾" wide. Also in 4-foot units.



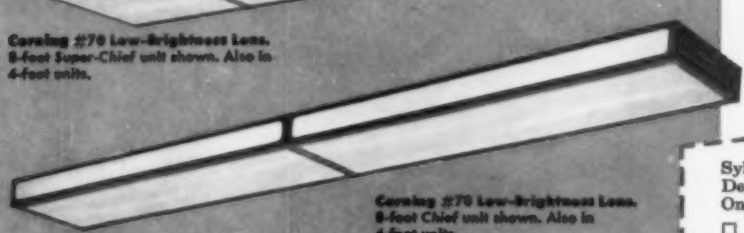
Dished Contour Plastic shielding on 8-foot Chief, 13⅜" wide. In 4- or 8-foot units.



Metal Louvers. Available only on the Chief, 13⅜" wide. In 4- or 8-foot units.



Corning #70 Low-Brightness Lens. 8-foot Super-Chief unit shown. Also in 4-foot units.



Corning #70 Low-Brightness Lens. 8-foot Chief unit shown. Also in 4-foot units.

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☐ Please send me your new booklet with complete data on the *Mohawk* Series.

☐ Have a Sylvania lighting specialist call on me.

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Organization_____

Address_____

City_____ Zone____ State_____

Since its use on the

(above) CHRIST EPISCOPAL CHURCH, Indianapolis, Ind. 1,000 lbs. of Revere Copper were used to form the spire and finial of which a close-up view can be seen above. Finial is a fine example of how Revere Copper can be worked into any shape or form. Re-roofing of spire and fabricating of finial were done by RALPH R. REEDER & SONS, with HUBBELL METALS supplying the Revere Copper.

FIRST BAPTIST CHURCH, Wilmington, N.C. Architect: CHARLES C. HARTMANN, Wilmington and Greensboro, N. C. Sheet Metal Contractor: E. S. PIVER & SON. 12,000 lbs. of non-rusting Revere 16, 20 and 24 oz. Cold Rolled Copper replaced a heavier material with which the two steeples were originally covered and which was deteriorating. The larger of the two steeples is 212' high with a 40' base tapering to 1' at the top. Revere Copper supplied by LYON CONKLIN and POTTS FARRINGTON.

DANFORTH CHAPEL of Colorado A&M College, Minneapolis. Architect: JAMES M. HUNTER, A.I.A. Flashing and louvers as well as the repousse doors (see close-up) are of Revere Copper. Inside, candelabra, lectern and cross also are fashioned from Revere Copper

ST. ANTHONY CHURCH, Detroit, Mich., where 30,000 lbs. of enduring Revere Sheet Copper were used to replace a roof that was costing considerable to keep in repair. DAVE POMAVILLE & SONS ROOFING & SHEET METAL COMPANY did the job. Revere Copper was supplied by SEMMLER WHOLESALE SUPPLY CO.

ST. JOSAPHAT'S UKRANIAN CHURCH, Rochester, N.Y. Architect: E. M. LORSCHEIDER. Sheet Metal Cont.: SPRING SHEET METAL & ROOFING CO. Revere Dist.: FOLLANSBEE METALS CORPORATION OF NEW YORK. 2,500 lbs. of Revere 20 oz. Leadtex Copper replaced material on entire steeple that was cracking and endangering pedestrians

Old North Church in 1806

REVERE COPPER

Has protected our houses of worship the Country over

According to a record book recently discovered in an old chest stored in a stable, Paul Revere once sold 681½ pounds of sheet copper at .48 per lb., and assorted copper wrought nails at .54 per lb. for use on the steeple of the Old North Church, Boston. The dates were July 19th and September 18th, 1806, five years after Paul Revere rolled the first copper sheet in America at his mill in Canton, Mass.

In 1954, the modern mills of Revere rolled and donated approximately 8,000 lbs. of copper for sheathing the new steeple of the Old North Church replacing the one toppled by Hurricane Carol (see photos this page).

So, for a century and a half Revere Sheet Copper has been used on churches of every denomination, for crosses, roofs, gutters, leaders, flashing, doors, spires, fleches and other ornamentations. And, on the inside, Revere Copper Water Tube is being used extensively in radiant panel heating systems and water lines. Not alone in churches, but in Government Buildings, State Capitols, hospitals, schools, municipal and office buildings, from one end of our land to the other, Revere Copper has served faithfully.

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Architect: CHARLES R. STRICKLAND, A.I.A., Boston. Main spire on Old North Church, 50′ in height, 7′ at the base and tapering to 1′ at the peak, originally was made from wooden shingles. Here you see new spire with Revere Lead-Coated Copper being formed to simulate original shingles. Each shingle is attached to the plywood sides which in turn are fastened to a steel frame running the length of the steeple. This frame is fastened to the foundation. Sheet Metal Contractor: PAUL E. DUTELLE. Basic copper work was done in shop, using approximately 8,000 lbs. of 16 oz. Revere Lead-Coated Copper (Leadtex).

When final assembly of the steeple was made at the site, the largest crane in Boston was called on to hoist steeple into place. All trim, flashing, roofing and deck are Revere Leadtex Copper.

p/a manufacturers' literature

Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.

★

air and temperature control

160. Amana Central-System Air Conditioning, AIA 30-F-1, 24-p. guide for installation of self-contained, air-cooled air-conditioning system. Describes basic 2- and 3½-hp models as well as accessories; gives suggestions for installing unit in attic, basement, utility room, and in two-story homes. Performance charts; wiring diagrams; specifications. Amana Refrigeration, Inc., Amana, Iowa.

161. Manual of Exhaust-Hood Designs (270-E3), 12-p. bulletin on exhaust hoods for control of dust in woodworking industry. Explains how faster cutting speeds of modern machinery have increased volume of dust and shavings; describes exhaust ventilation for sanders, saws, borers, planers, and other woodworking equipment. Photos; drawings of exhaust hoods; table of exhaust requirements. American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

162. M-S-A Ultra-Aire Space Filter (1505-3), 4-p. file folder featuring glass-fiber web for filtering minute particles of air-borne contaminants. Outlines advantages of filter for research laboratories, nuclear-energy projects, and other industries requiring exceptionally clean air; gives data on performance of lightweight, high-strength filter. Drawings; charts; dimensions. Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.

Trane Refrigeration Manual (3rd Ed.), 148-p. technical manual revised to include new developments in air-conditioning systems. Intended as handbook on installation, service, and maintenance of refrigeration equipment, manual describes each component of air-conditioning system and its controls; also explains design of refrigeration and water piping. Discusses testing of completed installation; outlines procedure for placing system in operation; tabulates common complaints with probable causes. Drawings; charts; glossary of terms. Available only on direct application to The Trane Co., La Crosse, Wis. $1.50.

construction

Timber Foundation Piles, 68-p. handbook on pressure-treated piles. Explains advantages of treated-wood piling for foundations, bridges, and other heavy construction loads; contains pile-driving formulas, means for determining safe loads, and methods of solving problems of uplift or lateral forces. Includes ASTM specifications for selection of timber piles; gives American Wood Preservers' Association standards for preservative treatment. Photos; charts. Available only to architects and engineers on direct application to American Wood Preservers' Inst., 111 W. Washington St., Chicago 2, Ill.

225. V-Corr Industrial Roofing and Siding, 6-p. circular illustrating corrugated, porcelain-enameled steel roofing and siding. Outlines properties of sheeting; provides table for sizing and spacing of purlins. Details show installation of flashing; drawings indicate recommended method of fastening sheeting to steel-frame structure. V-Corr, Toledo Porcelain Enamel Products Co., 2275 Smead Ave., Toledo, Ohio.

226. Technical Data on Southern Pine: Glue-Laminated Lumber, AIA 19-A-1 (8), 8-p. bulletin on design and specification of glue-laminated beams and arches. Describes lamination process; provides data for design of beams and arches, including sample calculations for straight beam. Specifications cover materials, fabrication, and finishing. Photos; table of section properties. Southern Pine Assn., P. O. Box 1170, New Orleans 4, La.

227. Teco Products and Services (56), 12-p. guide to products of lumber-industry service organization. Gives description as well as design data for timber connectors —split ring, shear plates, toothed ring, spike grid, clamping plate, and framing anchors. Recommends uses for each connector; provides photos, details, and dimensions. Timber Engineering Co., 1319 18 St., N. W., Washington 6, D. C.

★ **228. 2-4-1 Plywood Floor System** (72), 25-p. laboratory report on new combination subfloor/underlayment plywood panel. Gives results of tests establishing structural adequacy of 1⅛" seven-ply panel; provides stress ratings and framing calculations. Also discusses durability, strength, and stiffness of panel; outlines recommended construction practices. Tables of test results; charts; general framing plan and typical details. Douglas Fir Plywood Assn., Tacoma 2, Wash.

229. Thulman Fireplace, AIA 5-H, 8-p. pamphlet presenting prefab, all-metal fireplace for use in dry-wall construction. Drawings show installation of preassembled unit which needs no footings, masonry, or bracing; details indicate framing of structure around fireplace. Photos of actual installations show variety of design treatments possible. The Majestic Co., Inc., Huntington, Ind.

230. Permalok Nailable Stud System, 4-p. circular illustrating lightweight, nonbearing steel framing system consisting of studs, track, bridging, and fasteners. Shows 24-gage steel stud to which metal lath, gypsum lath, and almost any panel can be nailed; describes method of attaching materials and erection of framing system. Drawings; dimensions. Penn Metal Co., Inc., 205 E. 42 St., New York 17, N. Y.

Fine Hardwoods Selectorama, AIA 19-E-5, 60-p. manual on selection and application of fine hardwoods. Presents geographical sources, colors, patterns, characteristics, and price ranges of more than 400 commercially available hardwoods; all entries are cross referenced under names by which they are known in different regions. Illustrates methods of matching veneers to obtain distinctive effects with wood; also discusses recent developments in wood finishes and plywoods. Photos; charts. Available only on direct application to Fine Hardwoods Assn., 666 Lake Shore Drive, Chicago 11, Ill. $1.50.

231. Steeltex Reinforcement, 20-p. booklet containing information on welded-steel-mesh reinforcement with pliable form attached. Explains use of combination reinforcing and forming in stucco exteriors, plaster walls and ceilings, concrete floors, and masonry veneer; discusses advantages of reinforcement/forming for commercial, institutional, and residential building. Photos; construction diagrams; tables. Pittsburgh Steel Products, Grant Bldg., Pittsburgh 30, Pa.

232. Stran-Steel Structural Systems, 24-p. catalog on lightweight steel-framing system. Shows joists, studs, and channels specially formed to permit nailing; gives data on cold-formed-steel columns and beams; presents new line of metal curtainwall panels for insulated or uninsulated assemblies. Outlines design procedure, including formulas and sample problems; gives section-property tables. Drawings; details; specifications. Stran-Steel Corp., Ecorse, Detroit 29, Mich.

Exterior Masonry Construction, 76-p. booklet by Walter C. Voss, formerly of MIT's Dept. of Building Engineering and Construction. Discusses fundamentals of sound, watertight masonry construction; explains influence of mortar, masonry units, design, and workmanship on masonry; describes effects of weather on exterior masonry surfaces. Includes data on recommended construction practices; photos; tables. Available only on direct application to National Lime Assn., 925 15 St., N. W., Washington 5, D. C.

doors and windows

370. Washington Hardware, AIA 27-A (T-55), 12-p. catalog on line of residential rolling-door hardware. Provides information on wheels, hangers, aluminum or steel track, and accessories; also gives data on new aluminum track with built-in ground for plaster or wallboard. Details, dimensions. Washington Steel Products, Inc., Tacoma 2, Wash.

371. Weslock 900-Series Locksets, 4-p. color folder presenting line of residential locksets. Illustrates nine locksets for interior, exterior, and closet doors; shows

matching door handles and escutcheons. Also contains description of construction and finishes. Western Lock Mfg. Co., 211 N. Madison Ave., Los Angeles 4, Calif.

372. International Doors for Industry, 8-p. booklet giving information on custom-built industrial doors. Features guide for selection of proper door type; describes operation of vertical-lift, turnover, crane, and vertical-lift pier doors. Drawings; specifications; photos of recent installations. Marketing Services Div., International Steel Co., Evansville, Ind.

373. Owens-Illinois Glass Block, AIA 10-F, 24-p. bulletin explaining importance of glass blocks for functional control of daylight. Describes properties of several types of light-directing light-diffusing, solar-selecting, and non-sun-exposure blocks; gives drawings as well as dimensions for each block. Features eight pages of typical details showing glass-block panels in steel, wood, or masonry construction. Design charts; specifications. The Kimble Glass Co., Toledo 1, Ohio.

374. Lemlar Jalousies, AIA 35-P-2, 20-p. brochure on sun-control equipment. Explains value of adjustable jalousies for control of heat as well as light; describes jalousies designed especially for darkening of audio-visual schoolrooms. Also includes data on stationary louvers and sun canopies. Photos; details; specifications. Lemlar Mfg. Co., P. O. Box 352, Gardena, Calif.

375. Schlage Locks, 12-p. brochure illustrating line of residential locksets. Features two new open-pattern escutcheons which permit insertion of background colors and textures; shows many other designs in aluminum, bronze, brass, and chrome finishes. Describes operation of locksets; contains data on auxiliary locks and latches. Color photos. Schlage Lock Co., 2201 Bayshore Blvd., San Francisco, Calif.

electrical equipment, lighting

451. RLM Standard Specifications, AIA 31-F-233, 40-p. revised specification manual on industrial lighting fixtures. Discusses advantages of all-white porcelain-enameled reflectors; provides standards for fabrication of reflector units for fluorescent and incandescent lamps. Also includes standard specifications for testing and inspection of lighting fixtures. RLM Standards Inst., 326 W. Madison St., Chicago 6, Ill.

452. Outdoor Lighting with Plexiglas (PL-242), 16-p. brochure containing information on lighting fixtures for roadways, industrial plants, and large outdoor areas. Discusses advantages of outdoor fluorescent luminaires with acrylic-plastic shields; explains savings in maintenance and operating costs. Presents photos of many actual installations. Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.

453. Frink Lighting Equipment, AIA 31-F-2, 4-p. folder showing lighting fixtures used in New York City Coliseum. Features ceiling-mounted fixtures with integral air-conditioning diffusers; illustrates special lighting units for elevator lobbies and exhibition areas. Includes data on incandescent downlights and louvered fluorescent fixtures. Drawings; dimensions. The Frink Corp., 27-01 Bridge Plaza North, Long Island City 1, N. Y.

454. Globe Lighting, AIA 31-F-23, 16-p. brochure presenting line of contemporary-styled lighting fixtures suitable for residential and commercial lighting. Includes several hanging fixtures, some with polished-brass shades; also illustrates many types of wall lamps. Gives description of materials and dimensions for each fixture. Globe Lighting Products, 1710 Flushing Ave., Brooklyn 37, N. Y.

455. Color-Corrected Mercury-Vapor Lighting, AIA 31-F-23, 20-p. booklet discussing use of mercury-vapor lamps for indoor sports and assembly areas. Explains advantages of color-corrected mercury-vapor lamps; gives suggestions for providing sufficient light for TV coverage of sports events. Illustrates several recent installations; gives typical lighting layout. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.

finishers, protectors

511. Adhesives, Coatings, and Sealers, 12-p. publication containing information on wide variety of adhesives and coatings. Lists properties of elastomeric adhesives; rubber, resin, and synthetic base coatings; rubber and elastomer base sealers. Describes each product and outlines special advantages. Adhesives and Coatings, Div., Minnesota Mining and Mfg. Co., 411 Piquette Ave., Detroit 2, Mich.

512. Stop Rust With Rust-Oleum (255), 28-p. catalog covering rust-preventive products. Describes special rust-preventive coating composed of processed fish oil and rust-inhibiting pigments; provides directions for use and application of coating. Also gives information and color charts for: primer-type coatings; oil field finishes; machinery and implement finishes; coatings for galvanized metals; heat- and chemical-resistant coatings; and floor finishes. Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.

insulation

621. Perm-Seal Filler Strips, AIA 12-H, 12-p. pamphlet containing information on sealing strips for corrugated materials. Drawings show rubber, soft-rubber, and asphalt fillers for ribbed or corrugated panels; sketches indicate installation at top and bottom of siding panels, around openings, and with roofing. Provides physical properties for each type of filler; gives data on mastic and paint. Specifications. Asphalt Corp. of America, Danville, Ill.

622. Heat Flow by Radiation in Buildings, AIA 37-C-3, 48-p. manual explaining basic laws of heat flow. Discusses emissivity, absorptivity, and reflectivity in radiation; shows importance of reflective spaces; describes action of heat flow. Also includes information on aluminum-foil/air-space insulation; gives instructions for installation in wood- and steel-framed buildings. Photos; drawings; tables. Infra Insulation, Inc., 525 Broadway, N. Y.

623. Thiokol Calking and Glazing Compounds, AIA 7-D, 4-p. file folder on liquid, synthetic-rubber calking and glazing compounds. Describes features of synthetic-rubber material which is not subject to deterioration from oxygen, resists oils and solvents, and remains elastic through temperature range of —65F to 250F. Gives recommendations for application of calking; shows use in glass-curtain-wall construction and in expansion joints. Thiokol Chemical Corp., 780 N. Clinton Ave., Trenton 7, N. J.

sanitation, plumbing, water supply

Pipelines to the Future (3), 68-p. technical report and market study on plastic piping. Features graphs comparing per-

(Continued on page 174)

PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York 22, N. Y.

I should like a copy of each piece of Manufacturers' Literature circled. We request students to send their inquiries directly to the manufacturers.

160	231	452	715	930
161	232	453	716	931
162	370	454	717	932
225	371	455	827	52
226	372	511	828	53
227	373	512	829	54
228	374	621	830	2
229	375	622	831	
230	451	623	929	

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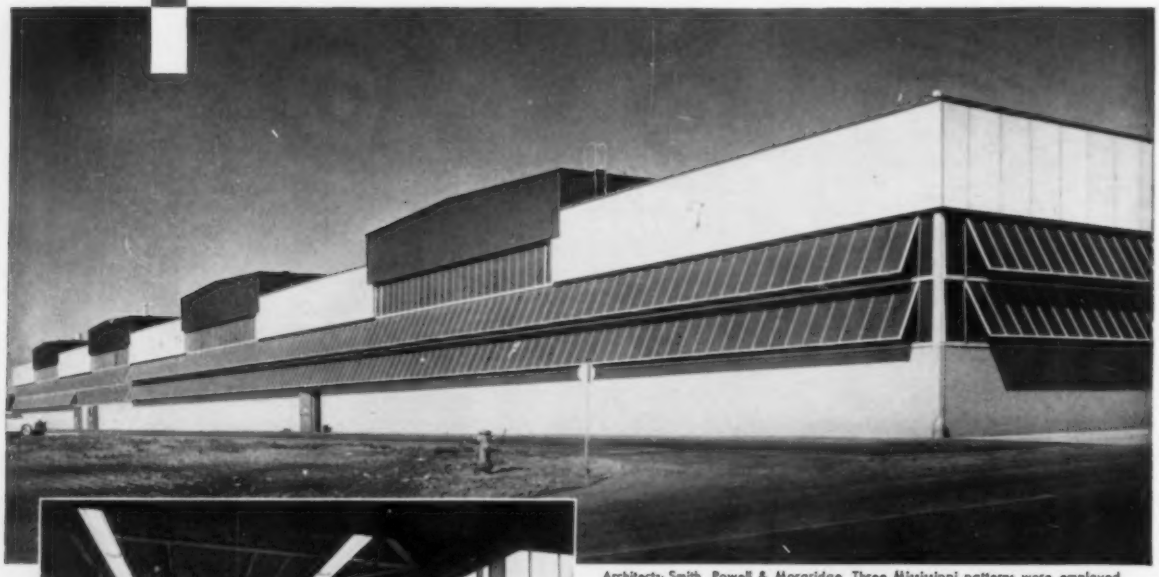

Architects: Smith, Powell & Morgridge. Three Mississippi patterns were employed in this plant: Coolite, Heat Absorbing, Glare Reducing Glass, 19,212 sq. ft.; Smooth Rough, 5,256 square feet; Coolite Wire, Glare Reduced, 5,377 sq. ft.

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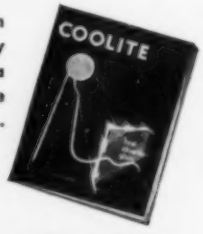

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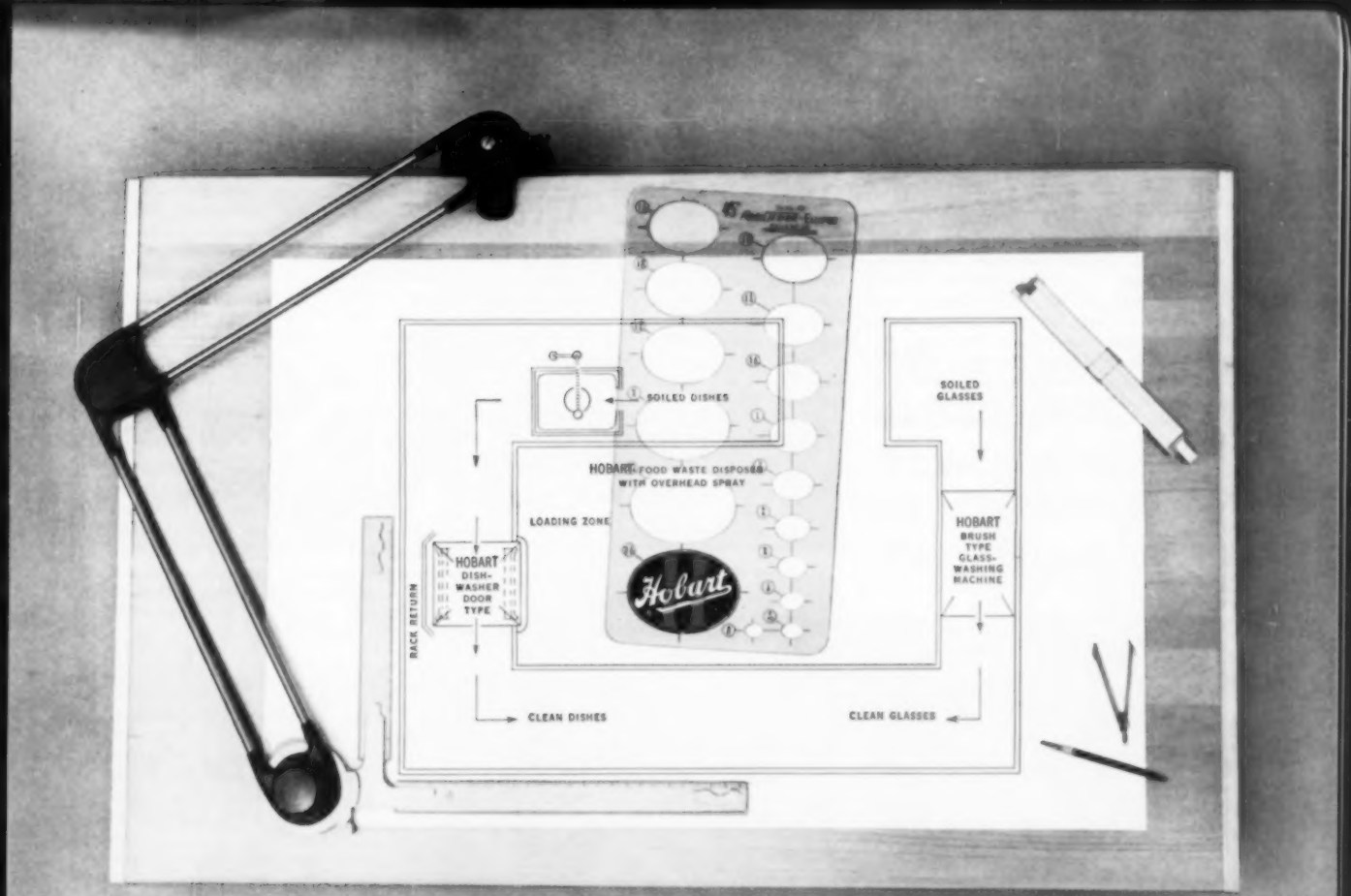

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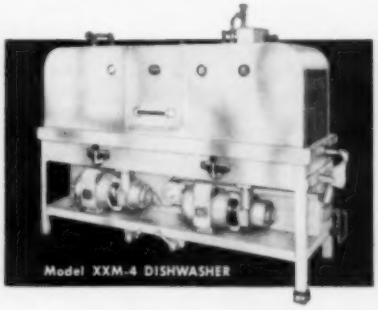
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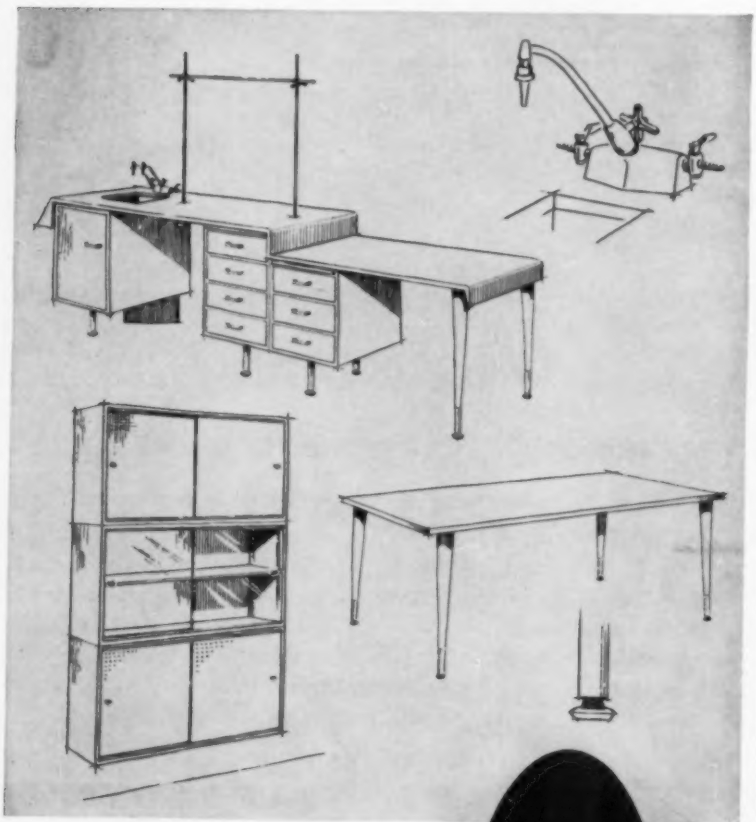
p/a manufacturers' literature

(Continued from page 171)

formance and cost of important plastic and metal piping materials. Describes plastics most commonly used for piping; includes analysis of manufacturing and distribution costs for five plastics—polyethylene, cellulose acetate butyrate, styrene copolymers, rigid polyvinyl chloride, and reinforced polyesters. Available only on direct application to Plastics Div., Monsanto Chemical Co., Springfield, Mass. $1.

715. Morse Boulger Destructors, AIA 35-J-41 (181), 12-p. catalog containing information on both heavy-duty incinerators and small domestic units. Gives description, dimensions, and operational drawings for several types of heavy-duty units; provides data for selection of residential and flue-fed incinerators. Drawings; specifications; chart of estimated waste-production rates. Morse Boulger Destructor Co., 80 Fifth Ave., New York 11, N. Y.



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JOHN E. SJÖSTRÖM COMPANY, INC.
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716. Rapidayton Products (561), 36-p. bulletin on pumps, water systems, water softeners, and drainers. Describes several jet, submersible, and piston-type pumps also available in completely packaged water systems; gives data on drain pumps; contains information on automatic and manual water softeners. Includes engineering data for selection of water-supply equipment. Drawings; specifications. The Dayton Pump & Mfg. Co., 500 N. Webster St., Dayton 1, Ohio.

717. Anaconda Copper Tubes and Fittings for Sanitary Drainage Systems, AIA 29-B (C-33), 8-p. pamphlet describing use of drawn copper tubing for sanitary and storm-drainage lines. Outlines advantages of lightweight, corrosion-resistant copper tubes; gives chart of standard dimensions and weights. Shows cast-bronze solder-type drainage fittings; indicates typical copper-tube roughing-in layout. The American Brass Co., Waterbury 20, Conn.

specialized equipment

827. Geneva Home-Arts Equipment, 40-p. catalog of equipment for homemaking classes. Describes features of sound-insulated steel cabinets; shows six colors available in baked-enamel finish. Gives drawings and dimensions for each cabinet unit; also describes special accessories. Includes data on planning of homemaking classrooms; specifications. Geneva Modern Kitchens Div., Acme Steel Co., Geneva, Ill.

828. Spacemaster Visual Merchandising Equipment (55S), 132-p. catalog on adjustable metal hardware for merchandising displays. Photos suggest ideas for wall and counter displays; drawings indicate equipment used. Equipment section gives drawings and dimensions for adjustable brackets, standards, uprights, racks, and special display frames. Reflector Hardware Corp., 2235 S. Western Ave., Chicago 8, Ill.

829. Special-Hazard Fire Protection (73) 28-p. booklet explaining engineered fire detection and control to protect industries with special fire hazards. Describes operation of rate-of-temperature-rise, smoke, and vapor detection systems; discusses fire control with fog-type water spray, foamed-water blanket, carbon dioxide, and dry chemicals. Also gives data on fire control with chemical foams and steam carbon tetrachloride. Drawings; chart of recommended extinguishing mediums for various locations. Automatic Sprinkler Corp. of America, 1107 Wick Ave., Youngstown 4, Ohio.

830. Glenco Commercial Refrigeration, 104-p. catalog on commercial refrigerators and freezers. Covers reach-in, tray-file, and dual-temperature refrigerators; also describes freezers, display cases, and bottled-beverage coolers. Gives dimensioned drawings, which show electrical connections and drain lines; specifications. Glenco Refrigeration Corp., Janney and Ann Sts., Philadelphia 34, Pa.

(Continued on page 180)

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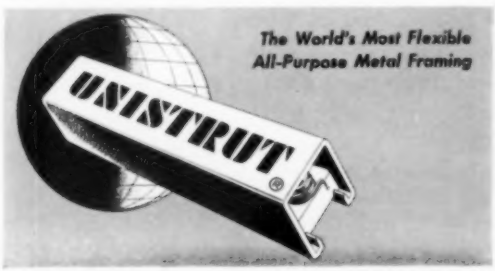

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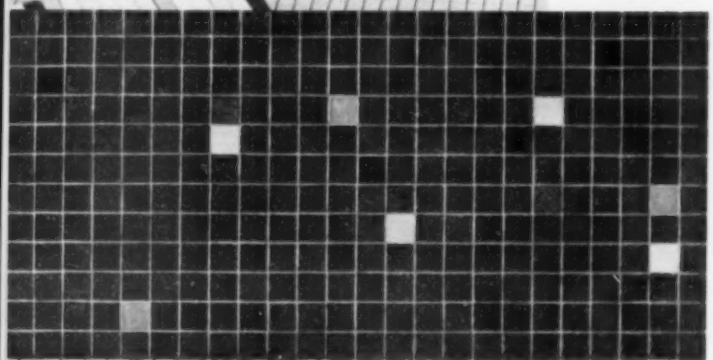
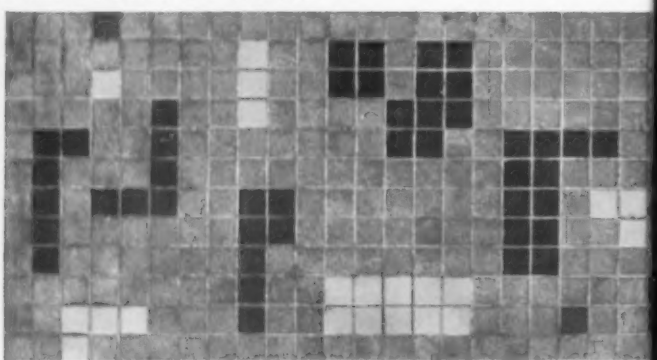
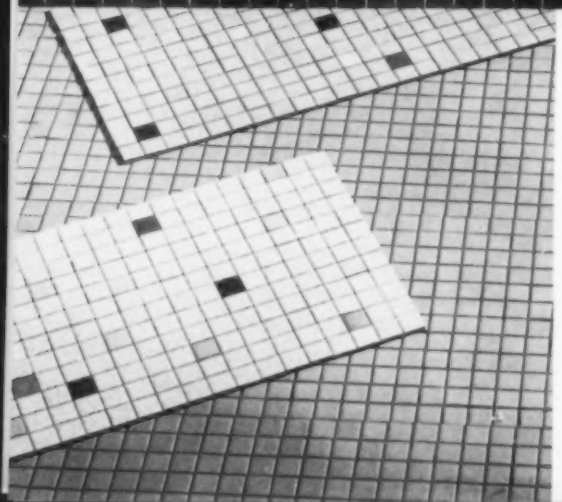


▲ Spivak Suntile Design No. 13 (Static Buckshot) Field color: 148 Walnut



▲ Spivak Suntile Design No. 4 (City Plan) Field Color: 154 Larkspur



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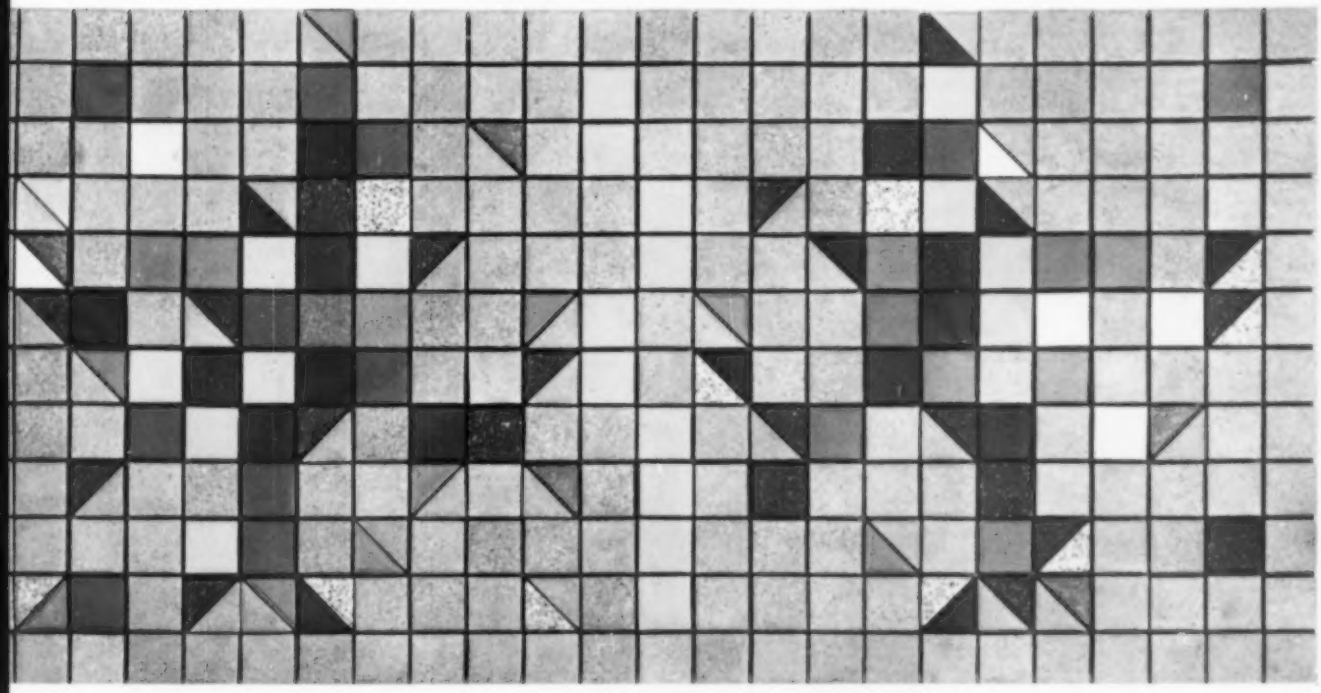


▲ Spivak Suntile Design No. 7 Cock Fight *(ungrouted)*
Field color: I32 Birch Range

ceramics

Exciting abstract patterns—subtle color harmonies — interesting textural effects — wide design flexibility—

These are just some of the features of this new group of contemporary stock patterns in Suntile Satinized Ceramics, designed by the well-known ceramic mural artist, Max Spivak. They permit you to take full advantage of both the decorative and practical characteristics of Suntile—on a relatively modest budget.

Each of the nine basic motifs is made up of 1″ x 1″ unglazed tile mounted on regular 2′ x 1′ sheets for quick installation. Only a few of the many design possibilities offered by this group are suggested here.

Because only rugged, natural clay and porcelain Suntile are used, these patterns are equally serviceable in walls, floors or counter tops—indoors and out.

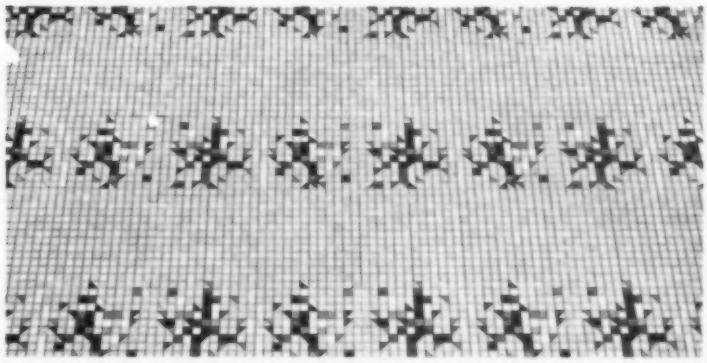
For guaranteed installation, call your Authorized Suntile Dealer. His name is listed in the yellow pages of your phone book.

Spivak Suntile Designs, Copyright 1956

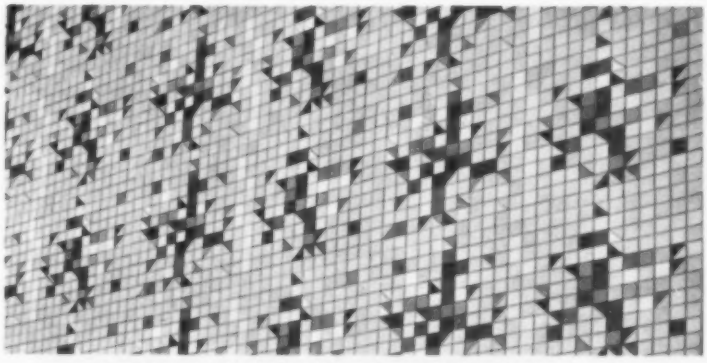
THE CAMBRIDGE TILE MFG. CO.

P.O. Box 71, Cincinnati 15, Ohio

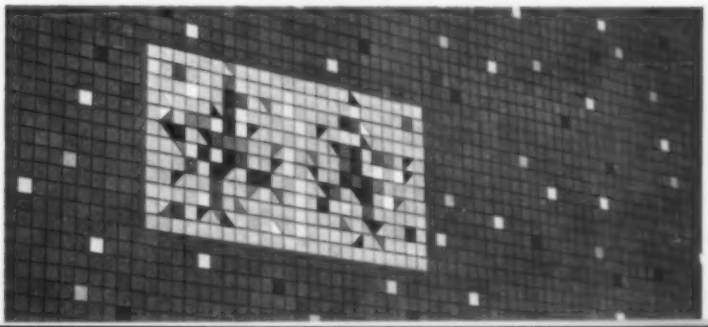
▼ Cock Fight Design in Stripes, Field color: I32 Birch Range



▼ Overall Pattern with Cock Fight Design

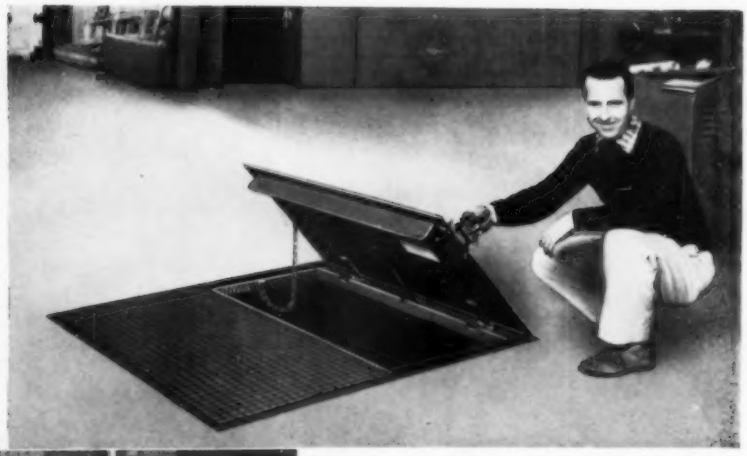


▼ Cock Fight Design in Field of Spivak Suntile Pattern No. I3 (Static Buckshot) Field color: I48 Walnut



City Zone State

INSIDE



OUTSIDE

THE BILCO DOOR DOES THE JOB BETTER

All BILCO Doors are designed to serve your clients better whether installed inside or outside the building. Formed channel frame construction prevents dirt from accumulating under door leaves, eliminating the danger of warpage and costly repairs to broken hinges. Frame also insures absolute watertightness for exterior installations.

For floors, sidewalks, pits — any place there's a door under-foot — specify BILCO for long, trouble-free service, plus the safety and convenience of built-in springs for effortless operation.

The New Type T Floor Door . . . another BILCO first – to fill the need for a rugged, easy operating door to match the surrounding composition floor covering.

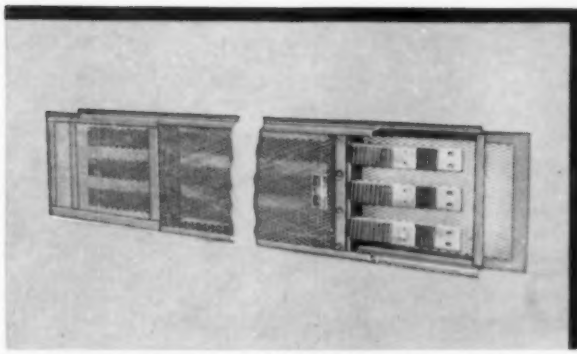
SEE OUR CATALOG IN SWEETS
OR WRITE FOR CATALOG A.I.A. FILE 12P

THE BILCO COMPANY
DEPT. 167A NEW HAVEN, CONN.

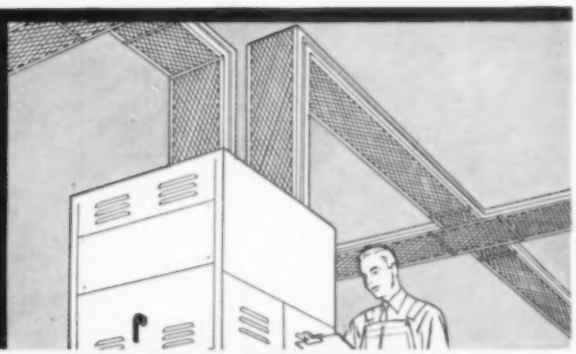
only the best is stamped

Bilco®

oldest and largest manufacturers of doors for special services



EXCLUSIVE SCARF-LAP CONSTRUCTION provides extra-high rigidity and strength. Sections come in tailored lengths, overlap and bolt together easily. Bulky joint fittings are eliminated.



ELBOWS, TEES AND CROSS SECTIONS permit flexible installation to meet specific needs. Exclusive paired-phasing arrangement of bus bars assures lowest possible current-carrying cost.

UP GOES "LO-X" DOWN COME COSTS

Aluminum bus bar feeder systems save money in installation and operation.

Economy with increased efficiency! Right from the start, BullDog Lo-X Bus Duct offers this practical saving. Widespread use in plants the country over proves this flexible, aluminum bus bar feeder system is a sound investment. Its lightweight, standardized, prefabricated sections go up faster, cut installation and handling costs sharply.

LO-X BUStribution® is completely reusable . . . and operates with maximum safety and efficiency. Here's true economy in installation, operation and long-range flexibility. Investigate the advantages of LO-X and its partner, Plug-In Duct. Ask your qualified distributor or BullDog field engineer, or write to BullDog Electric Products Co., Detroit 32, Michigan. © BEPCO

IF IT'S NEW... IF IT'S DIFFERENT... IF IT'S BETTER... IT'S **BULLDOG**

ELECTRIC PRODUCTS COMPANY

A Division of I-T-E Circuit Breaker Company

Export Division: 13 East 40th Street, New York 16, N. Y. • *In Canada:* BullDog Electric Products Co. (Canada) Ltd., 80 Clayson Road, Toronto 15, Ont.

p/a manufacturers' literature

(Continued from page 174)

831. Magic-Chef Commercial Cooking Equipment, AIA 29-F-3, 8-p. publication containing data on ranges and ovens for restaurants. Shows heavy duty ranges, baking and roasting ovens, griddles, and broilers; also illustrates sectional units which can be added as needed. Description and dimensions for each piece of equipment. Commercial Sales Dept., Magic Chef, Inc., 3201 Harvard Ave., Cleveland 5, Ohio.

surfacing materials

929. Armstrong Floors, Walls, and Counter Tops, AIA 23-G, 48-p. booklet presenting line of interior surfacing materials. Illustrates plastic, linoleum, vinyl-asbestos, rubber, and asphalt resilient flooring materials; contains data on special insets and cove bases. Includes information on cork wall surfacing; describes high-pressure plastic-laminate counter tops. Color photos of each pattern; specifications. Armstrong Cork Co., Lancaster, Pa.

930. Suntile Ceramic Tile, AIA 23-A, 20-p. brochure illustrating glazed and unglazed ceramic tiles. Presents color chart and dimensioned shape drawings for standard tiles; also contains information on special unglazed tile which provides unusual resistance to wear. Gives color chart showing complementary- and analogous-color tiles to harmonize with nationally known plumbing fixtures; color photos of actual installations; specifications. The Cambridge Tile Mfg. Co., P. O. Box 71, Cincinnati 15, Ohio.

931. Loxit Complete Chalkboard System, AIA 35-B-11 (B.B. 1956), 12-p. bulletin containing information on system which includes tackboards, chalkboards, sliding boards, trophy cases, and frames. Describes chalkboards made of wood fiberboard, cement-asbestos hardboard, and porcelain-enameled steel; shows compressed cork tackboards available in wide color range. Details show installation of boards in frames; specifications. Loxit Systems, Inc., 1217 W. Washington Blvd., Chicago 7, Ill.

TULSA COUNTY COURT HOUSE

Tulsa, Oklahoma

ARCHITECTS
Black & West

28 Balanced Doors in the entrances to Tulsa County Court House.

more . . . .
Ellison
doors

The Door that lets
TRAFFIC through QUICKLY

ELLISON BRONZE CO.
Jamestown, New York

Ellison
representatives in 77 principal cities in the United States, Canada and Puerto Rico

the BALANCED DOOR

interior furnishings

52. CustoMagic Built-In Gas Ranges, AIA 29-F-3, 6-p. bulletin containing information on built-in cooking appliances for residential installations. Shows oven-broiler unit and two-burner range units; gives dimensions and drawings for each. Magic Chef Inc., 1641 S. Kingshighway Blvd., St. Louis, Mo.

53. Harvard Frames, 16-p. booklet on mobile metal bed frames for residential and institutional use. Shows standard frames for Hollywood-type beds; describes frames for extra-large bedding; illustrates convertible sofa-beds with folding shelf for bolster support. Drawings; dimensions. The Harvard Mfg. Co., 6201 Woodland Ave., Cleveland 4, Ohio.

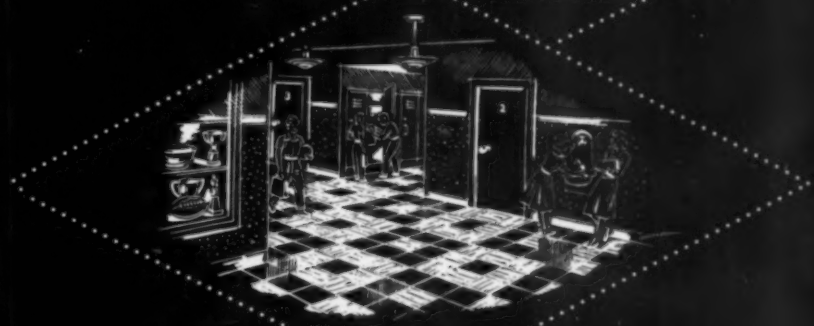
54. Post Furniture for the Drafting Room, 16-p. bulletin on wood and steel furnishings for architectural offices. Shows standard sections for interlocking, built-up filing cabinets; also illustrates tracing files, drafting tables, and chairs. Dimensions and description for each piece of equipment. Frederick Post Co., 3650 N. Avondale Ave., Chicago 90, Ill.

vertical transportation

2. Systematic Parking, AIA 33-C, 12-p. booklet describing use of elevators for multistory parking garages. Explains system whereby extra-large freight elevators are used to transport two cars at a time; describes system for moving cars horizontally without attendants. Drawings. Systematic Parking Co., Fidelity Bldg., Spokane, Wash.

OFFICE BUILDINGS

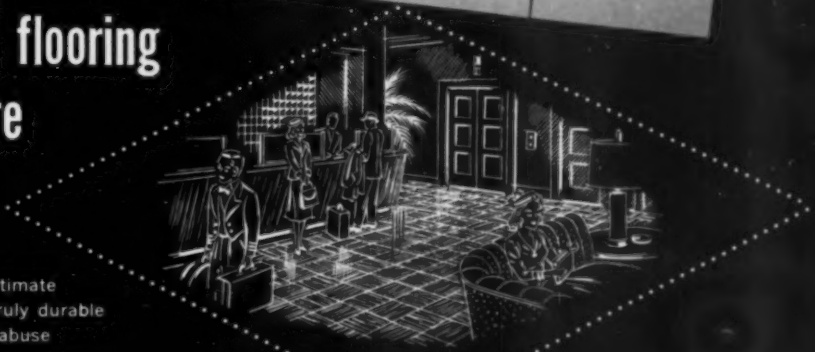
when
traffic
is
heaviest



SCHOOLS

WRIGHT

VINYL TILE flooring gives years more care-free wear!



HOTELS

WRIGHT Vinyl Tile provides the ultimate in rugged serviceability. Here is truly durable tile flooring, resisting the hardest abuse from scratches, scuff marks, stains. Acids, alkalis, and grease are quickly removed from its water-proof, non-slip surface. Impervious to temperature change, it will not warp, buckle or crack. Maintenance is easier, more economical too, than with any other type of resilient tile flooring.

Completely homogeneous, WRIGHT vinyl meets the most exacting quality control specifications. Its smooth, even surface never loses its brilliance, and the deep, clear colors retain their full richness even after years of wear.

For your next installation, look into the advantages of this beautiful and practical flooring.

WRIGHT MANUFACTURING COMPANY
Div. of Mastic Tile Corporation of America
Dept. W9-9, P. O. Box 986, Newburgh, N.Y.

Please send me full details on WRIGHT Vinyl Tile and WRIGHT Rubber Tile

NAME_____

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W A14

WRIGHT MANUFACTURING COMPANY Division of Mastic Tile Corporation of America
Houston, Texas • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.
Asphalt Tile • Confetti • Aristoflex • Maticork • Parquetry • Rubber Tile • Vinyl Tile • Cork Tile • Plastic Wall Tile

SILENT PARTNER

LOUVER-ALL CEILING BY ELECTRO SILV-A-KING, CHICAGO

The display windows of John M. Smyth Company, Chicago, one of the nation's finest home furnishing stores, demanded glare-free lighting in their large display windows to attract attention . . . create atmosphere . . . permit immediate appraisal. To provide the necessary high levels of glare-free illumination, Architect L. R. Sumnarhoff chose the attractive and functional Electro Silv-A-King Louver-all Ceiling.

Equally important was the choice of ADVANCE Fluorescent Lamp Ballasts to serve as *Silent Partner* . . . as the *heart* of this efficient lighting system. High lighting efficiency, trouble-free operation, and peak performance, prime requisites of any lighting installation, are guaranteed by the selection of ADVANCE Fluorescent Lamp Ballasts.

Continuing research and constant new developments by the ADVANCE TRANSFORMER COMPANY have made possible the introduction of many new ballasts with exclusive patented features. Thus, ADVANCE provides lighting equipment manufacturers, designers, architects, engineers, contractors and other fluorescent lamp ballast users with the world's most extensive line of fluorescent lamp ballasts. When you use ADVANCE, there is a ballast for every specific purpose, never a need to compromise.

For anyone who manufactures, specifies, installs or uses fluorescent lighting, ADVANCE TRANSFORMER COMPANY has prepared helpful literature which will be sent on request without obligation. Write today.

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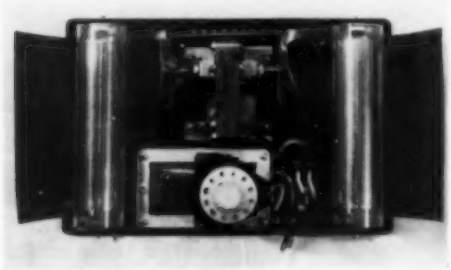
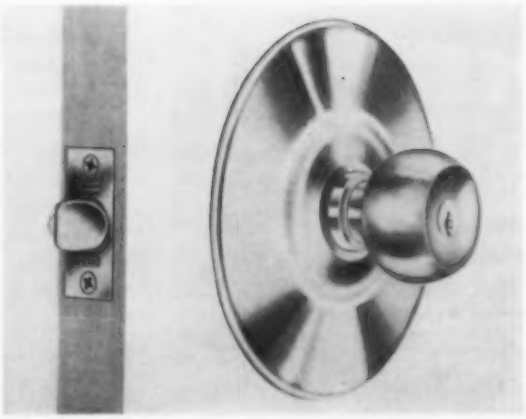
2950 NO. WESTERN AVE. CHICAGO 18, ILL. U.S.A.

Windows slide horizontally—in either direction—through split vertical mullion of new curtain-wall framing system (left). *Mullion, 1½" wide, forms weathertight seal for sash and, also, conceals sash from view; in addition, all windows can be cleaned from inside building. Almost any combination of spandrel panels and sash can be used with heavy, extruded-aluminum frame. Glide Windows, Inc., 7463 Varna St., N. Hollywood, Calif.*

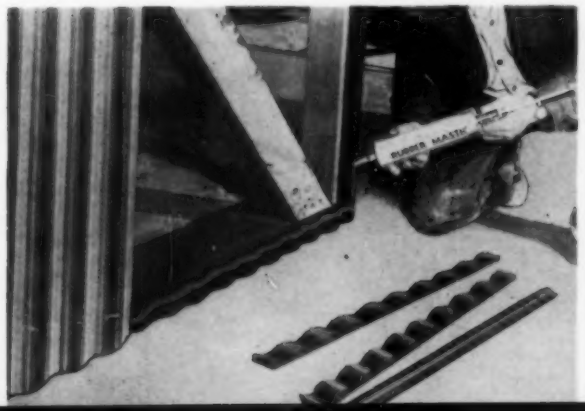
Gysling Swiss Air-Cleaner (right and below) *purifies air, destroys all odors, reduces spread of colds, and helps to keep people refreshed by release of active oxygen (O_3). Within unit are two production elements each consisting of aluminum-alloy cylinders separated by a glass insulator. Active oxygen is produced through high-frequency electric discharges on electrons of oxygen molecules in surrounding air. Infinite density range is controlled by stray yoke connected with transformer. Nitric-oxide contamination is only 0.006 percent. Gubelin International Corp., P. O. Box 305, Mt. Kisco, N. Y.*



A new, easily assembled cross-bore lock has been designed for medium construction and residential fields (right). *Conforming with Federal Specifications, Series 160, it may be used with any standard metal door cut-out for that series; minimum cross-bore diameter, however, is only 1½". By combinations of knobs and roses, 75 designs are possible. Sargent & Co., New Haven 9, Conn.*



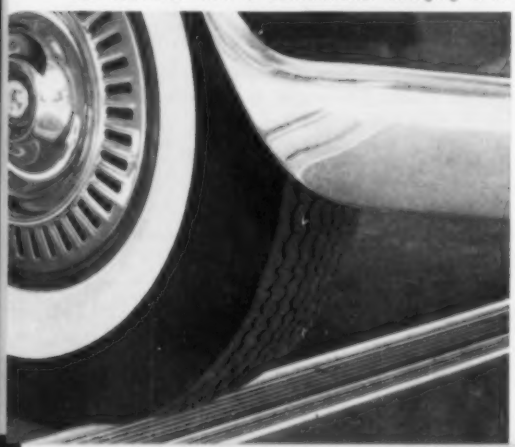
Preformed filler strips insure tight closure of joints around corrugated or ribbed surfacing materials. Strips are molded of soft rubber or asphalt (below right)—*in more than 70 shapes—for horizontal, vertical, and diagonal installations. For tightest seal, mastic application is recommended* (below). *Asphalt Corp. of America, Danville, Ill.*



Sliding glass doors open showrooms—invite public entry. The use of sliding glass units makes it possible to open the entire front of the car agency for a wide, unobstructed entry.

SLIDING GLASS WALLS OPEN

Sliding glass doors provide for easy and rapid exit and entry of cars from showroom floor. Shown here is a sliding unit combined with a conventional swinging unit.



Stainless steel track on Ador threshold remains undamaged as wheels of heavy car pass smoothly over the track.

Startling new uses for sliding glass doors are currently seen in auto showrooms. Where large areas of fixed store front glass with conventional swinging doors have long been used for car showrooms, today's trend is to greater use of aluminum sliding glass doors.

Ador sliding glass doors have found wide application in this field. Agency owners report Ador doors offer the following advantages:

1. **Invite public entry.** *The entire wall opens to the public in widths of 24′ or more to give better car display and encourage floor traffic into the showroom.*

2. **Provide easy movement of cars.** *Automobiles can be moved in and out of display areas quickly.*

3. **Give fingertip operating ease.** *Ador sliding glass doors are easy to operate—require only a light pressure to move even the largest sliding vents.*

4. **Offer savings of 40% or more.** *Ador sliding glass doors actually cost less than conventional swinging units.*

The use of Ador sliding glass units in the automotive field is one of many new applications. Positive weatherstripping; beautiful, corrosion-resistant Alumilite finish; and custom hardware are additional reasons for the widespread application of Ador sliding glass doors.

Ador invites your inquiries concerning your special requirements. For complete information write to: Ador Sales, Inc., 2347 W. Commonwealth Ave., Fullerton, California.

AUTO SHOWROOMS

Easy entry to showroom floor is assured by these Ador sliding glass doors. Note how the use of wide glass areas assures superior visibility and better display.

Transoms extend glass area. For heights above the standard 6' 10" and 8' 0" doors, Ador has designed transoms to extend glass areas up to 12' in height.

Ador **America's Foremost**
All-Aluminum Sliding Glass Door

p/a products

(Continued from page 183)

air and temperature control

HerNel-Cool Unit: year-round heating/cooling unit has been developed to meet demands of longer school terms and summer sessions in northern and central United States. Unit operates like conventional classroom ventilators during winter, spring, or fall—blending outdoor air with recirculated room air to heat, ventilate, cool, and eliminate odors; when outdoor temperatures rise above desired level, chilled water is introduced into unit and outdoor-air intake is reduced. Economy is effected by precooling classrooms with cooler night air; up to 100 percent outside air can be used. Herman Nelson Div., American Air Filter Co., Louisville 8, Ky.

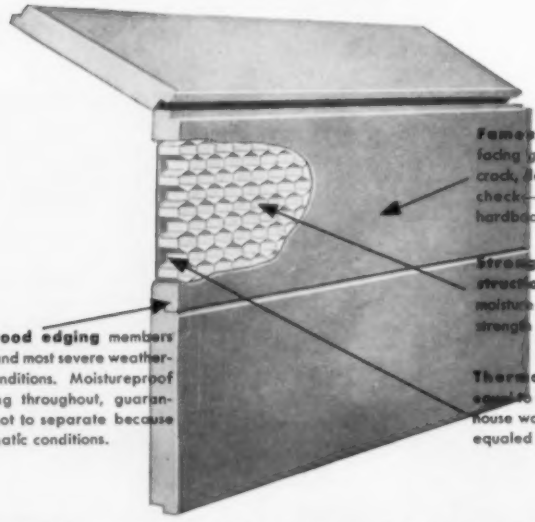
GE Outdoor Thermostat: new outdoor thermostatic control warns indoor thermostat of changing weather conditions. Control prevents indoor temperature from dipping when colder weather causes greater heat loss through walls. Small wafer of carbon compound senses weather changes and sends minute electrical signal through 25-v circuit to inside thermostat; indoor control then turns on furnace. Appliance Control Dept., General Electric Co., Morrison, Ill.

BARBER COLMAN

Barcol®

OVERdoors

now feature weatherproof flush sections with house-wall insulation value!


Famous WEATHER-KING facing guaranteed not to split, crack, delaminate, or weather-check—specially designed hardboard.
Strong honeycomb construction treated to withstand moisture and decay. Improved strength relative to weight.
Thermal insulation value equal to standard 5-inch frame house wall (U factor .257). Unequaled by any other door!
Redwood edging members withstand most severe weathering conditions. Moistureproof bonding throughout, guaranteed not to separate because of climatic conditions.

Now *a flush* door guaranteed against weather and with the insulating properties of a standard house wall! Combines with Barcol cam action snug closing to improve year-round comfort, cut cooling and heating costs.

Moistureproof, decayproof, verminproof, and fire-resistant, WEATHER-KING flush sections free architect, engineer, and builder from practically all limitations on use of attractive flush doors for residential, commercial, and industrial jobs. Yet the price is actually less than for most hollow-core doors! Shadow box window inserts and "*Door*naments" can be used as with any flush door. Call your Barber-Colman distributor (under "Doors" in phone book) or write:

Barber-Colman Company

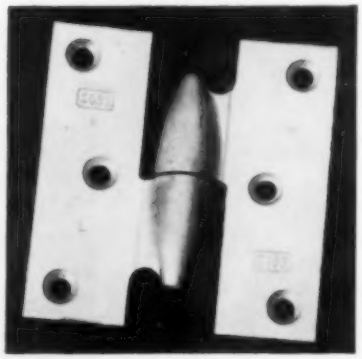
Dept. N69, Rockford, Illinois

construction

GPX-Yellow Plywood: medium-density plastic-surfaced plywood is produced to cut building costs and speed construction. Cellulose-fiber sheets, impregnated with phenolic resin, are bonded to plywood under heat and pressure; finished surface needs no sanding or priming and is claimed to require only one coat of paint. Panels are intended for utility uses where edges are not exposed to weather; price is lower than previous plastic-finished plywoods because C-grade veneers are used for inner core, B-grade veneers for top layers. Manufactured in standard 4'x8' panels in thicknesses from 5/16" to 1¼". Georgia-Pacific Corp., 270 Park Ave., New York, N. Y.

Milcor Steel Roof Deck: two improvements to steel roof decking—at no increase in cost—give added protection against corrosion and construction abuse. Tough, resilient primer of epoxy-resin enamel resists damages occurring during construction; coating, which requires minimum amount of touch-up, is said to provide excellent base for alkyd, rubber, oil, varnish, or vinyl paints. Bonderized base—underneath prime coating—insures that where damage has taken place, corrosion will not spread over surface nor undermine paint. Inland Steel Products Co., 4157 W. Burnham St., Milwaukee 1, Wis.

doors and windows

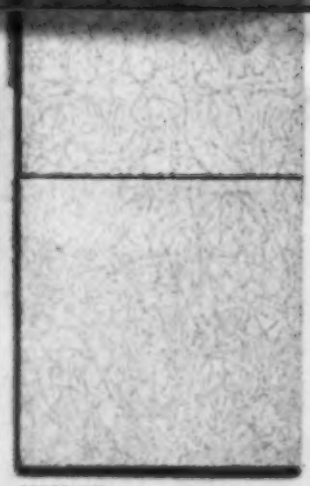


Soss Olive Butt: new hinge is as inexpensive and easy to install as butt hinge, yet retains grace of olive-style hinge. Door mounted on olive hinges can be removed, when open, without extracting any pins or screws; when door is closed it cannot be removed. Fixed hinge-pin rotates within heavy-duty nylon bushing, eliminating oiling and insuring smooth, silent operation. Right- or left-hand hinges are available for 1⅜" and 1¾" interior or exterior doors. Soss Mfg. Co., P. O. Box 38, Harper Station, Detroit 13, Mich.

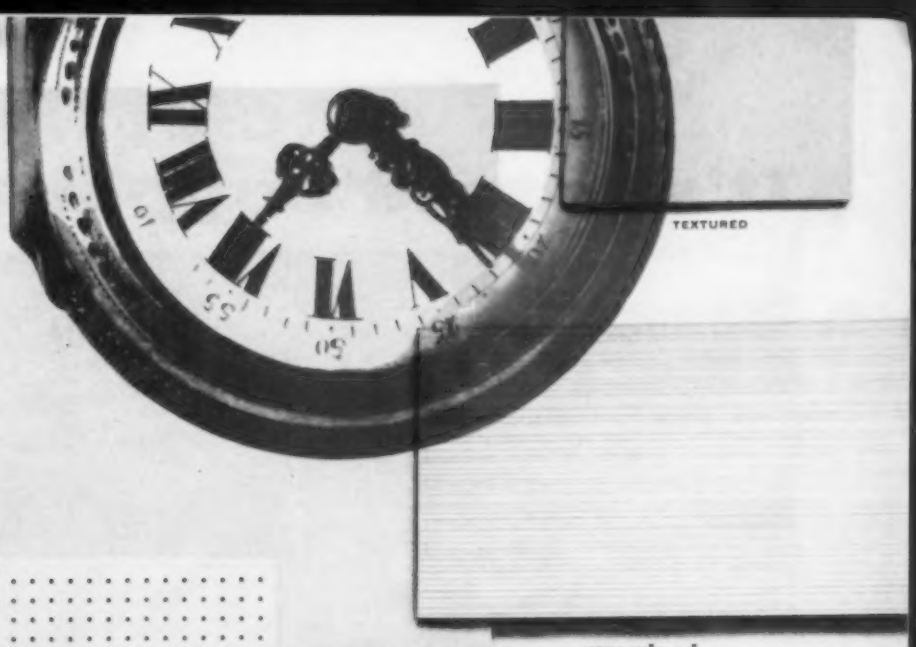
electrical equipment, lighting

Color-Matcher Unit: new fluorescent-lighting unit is claimed to provide equivalent of natural light entering North skylight at noon. Designed for ideal illumination of precision color tasks, light from

(Continued on page 190)



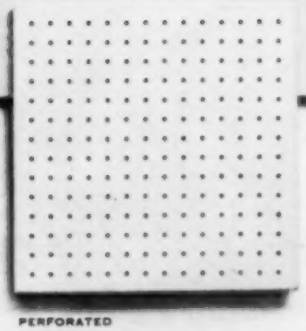
SONOFACED



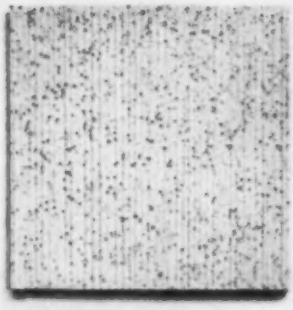
TEXTURED

STRIA 12" X 24"

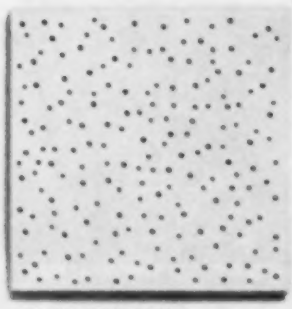
CEILING BOARD 24" X 48"



PERFORATED



SPATTER STRIA



RANDOM PERFORATED

they stand time's test...

stand off fire!

Yes, Fiberglas* Sound Control Products stand the test of time beautifully. Easily installed and maintained, these inorganic Fiberglas Ceiling Tiles won't shrink or swell, bag or sag—they keep their bright good looks through long years of service.

What's more, for all their extra value, Fiberglas Acoustical Ceilings are actually the lowest-cost *fire-safe* acoustical ceilings you can specify. If you'd like to know about the many new patterns, textures and colors available, just write: Owens-Corning Fiberglas Corporation, Dept. 68-L, Toledo 1, Ohio.

*T.M. Reg. Owens-Corning Fiberglas Corporation

OWENS-CORNING

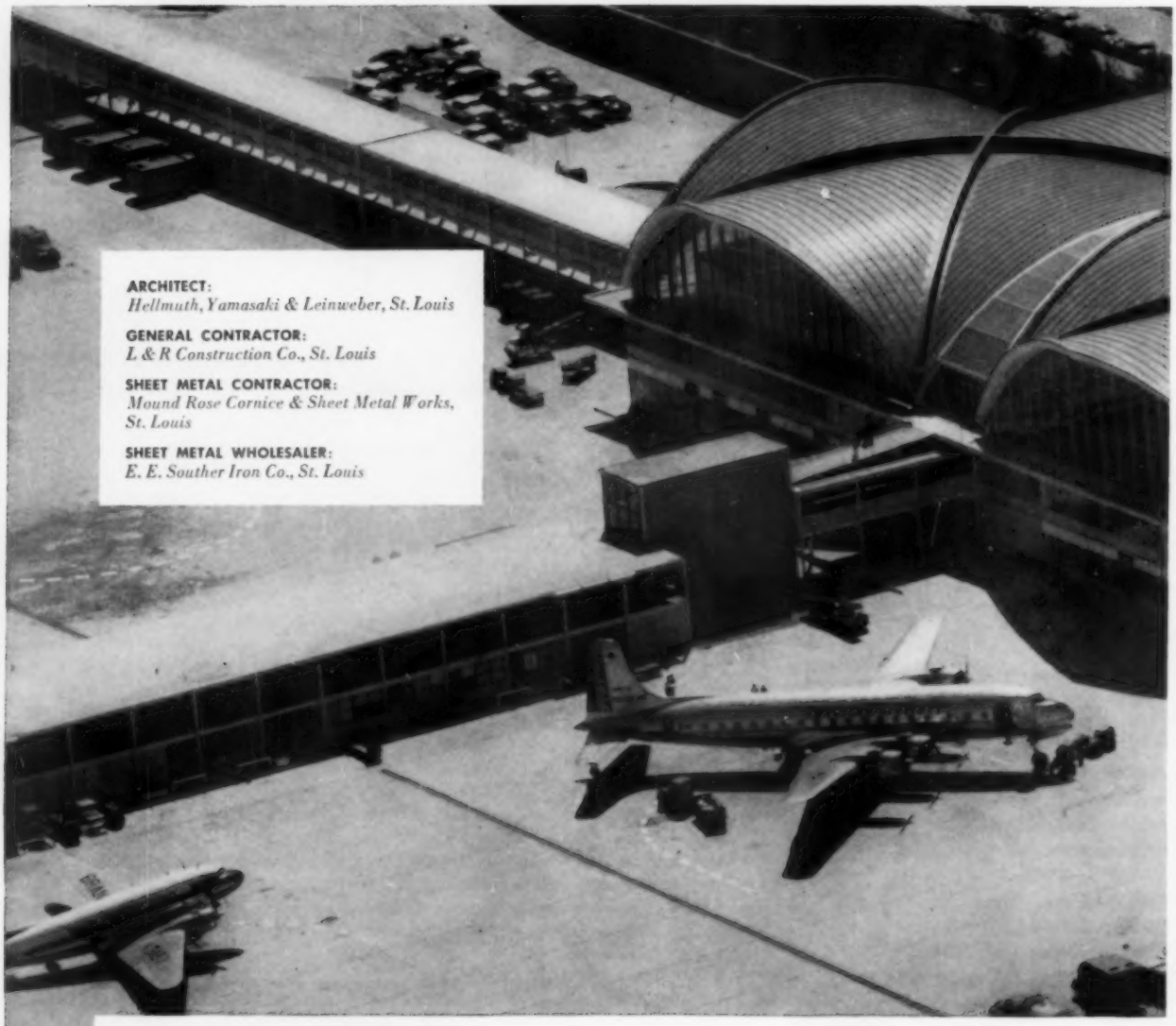
FIBERGLAS

SOUND CONTROL PRODUCTS

- Textured, Perforated, Sonofaced*, Stria* Acoustical Tile
- Textured, Sonofaced Ceiling Board • Noise-Stop* Baffles

TEXTURED 24" X 24"

It's Chase® copper for new



ARCHITECT:
Hellmuth, Yamasaki & Leinweber, St. Louis

GENERAL CONTRACTOR:
L & R Construction Co., St. Louis

SHEET METAL CONTRACTOR:
Mound Rose Cornice & Sheet Metal Works, St. Louis

SHEET METAL WHOLESALER:
E. E. Souther Iron Co., St. Louis

Sweeping, curved roof on new $4,500,000 Lambert-St. Louis Skyport uses 104,000 lbs. of Chase Sheet Copper

More than 50,000 square feet of surface! Three intersecting barrel-vaulted sections! This big roofing job called for flexible, long-lived 20 oz. and 24 oz. Chase Sheet Copper.

Using quality Chase copper really pays off! This versatile, malleable metal forms fast—fits the most complicated roof curves—helps you meet your completion deadlines. It's durable—adds years of trouble-free service to your jobs. Chase Copper, properly installed, is without equal for *permanent* roofing. Then, too, it gives your jobs a rich appearance that improves with the passage of time.

For workability, durability, beauty, specify Chase Sheet Copper on your next job!

St. Louis Skyport Roof!

NOTE: Chase Copper Water Tube was used for plumbing, part of the heating system and the copper coils in the cooling equipment.

Plumbing Contractor: *Corrigan Co., St. Louis.*
Plumbing Wholesaler: *Midland Plumbing and Heating Supply, East St. Louis.*

Chase® BRASS & COPPER CO.
SUBSIDIARY OF KENNECOTT COPPER CORPORATION
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p/a products

(Continued from page 186)

fixture covers full spectrum range and is said to be especially good for exacting comparison of colors. Unit combines six 40-w fluorescent lamps: four Super-Delux 45 (cool white which emphasizes even minor color variations) and two standard Blue. Lamps are housed in square, surface-mounted, steel-framed fixture with plastic diffuser; produces 75 ft-c illumination at working levels. Duro-Test Corp., North Bergen, N. J.

Magic-Carpet Door Controls: several new developments facilitate installation of automatic door controls. Hydraulically powered operator, enclosed in compact 4"x 7"x25⅛" unit, fits directly under door threshold; pump, motor, and controls—which can be located up to 35' from door—require only two lines of copper tubing to operator and electrical circuit to carpet activator. Inclined design of extruded-aluminum clip-on moldings for carpet activator provides safe approach for persons, carriages, and shopping carts; carpet itself is now available in blue, green, brown, and gray ridged plastic. The Stanley Works, New Britain, Conn.

Electra-Luminus Ceiling: prewired, preassembled luminous ceiling combines supporting frame and light source. Light-diffusing panels—lightweight corrugated strips of translucent vinyl sheet—are supported below fluorescent lamps on preassembled metal tracks; vertical channels supporting tracks also house sockets, wiring, and ballast for lamps; receiving channels, to fasten vertical members to ceiling, are flush mounted or suspended by rod hangers. Vinyl sheet, developed especially for light diffusion, resists color change; for sound conditioning, perforated-metal fins containing glass-fiber insulation can be attached to metal tracks. Luminous Ceilings, Inc., 2500 W. North Ave., Chicago 47, Ill.

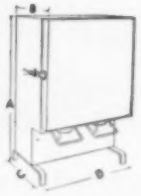
SUNROC MILK DISPENSERS

more SANITARY • more CONVENIENT • more ECONOMICAL

Mr. Harvey Reynolds, Manager of this SKF Industries cafeteria, operated by Slater Systems, observes self-service of milk. Hundreds of SKF employees daily enjoy better tasting, colder milk from the two Sunroc Dispensers in this modern cafeteria.

With exclusive sanitation features that meet rigid regulations, Sunroc Dispensers provide . . .

- **CONSTANT REFRIGERATION** of all milk, including that in the dispensing tube.
- **SINGLE-SERVICE DISPENSING TUBES,** furnished in required length to eliminate tube-clipping, and sterile-packed for sanitary, no-touch installation.
- **POSITIVE SHUT-OFF JAWS** to prevent offensive drip and splash between dispensing operations.
- **EASY CLEANING** without need for tools to disassemble equipment.
- **SINGLE HAND OPERATION** for maximum convenience.



A—42"
B—16¾"
C—16"
D—26¼"

This model holds two 5 gallon cans. Also available is a single can model for either 5 gallon or 10 gallon can.

Cabinet is stainless steel with rounded interior corners and chrome fittings.

SUNROC CORP.—Glen Riddle, Pa.
Send Milk Dispenser data to:
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COMPANY.....

ADDRESS.....

CITY.....STATE.....

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cream dispensers • water coolers • water stations
Branch Offices in principal cities CORPORATION GLEN RIDDLE, PA.

finishers, protectors

Dramex Paint: ready-mixed paint, in liquid form, gives appearance of plaster when dry. Applied directly from container, paint resurfaces interior plaster walls and ceilings; coating will also hide seams, dents, and nailholes in dry-wall construction. Washable paint, which may be textured while drying, produces sand-smooth finish; available in white and 12 colors. The Reardon Co., 7501 Page Ave., St. Louis, Mo.

sanitation

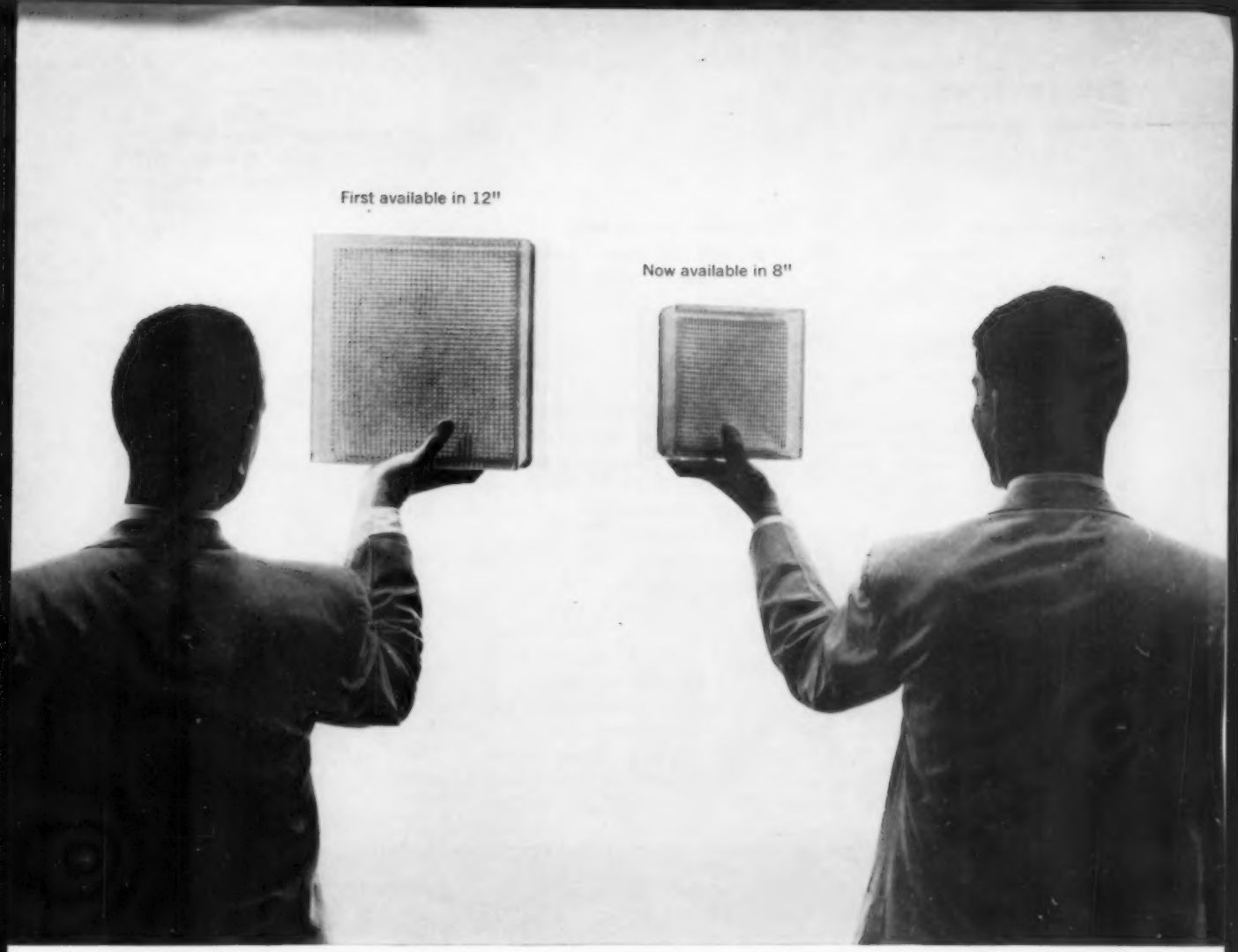
Wascolite Showerwalls: new bathtub enclosures feature decorative fabric embedded in acrylic-plastic panels. Enclosures, packaged for easy installation, include two corrugated-plastic panels, extruded aluminum top and bottom channels, and handles; brackets, screws, and cement are also provided. Enclosures are available with gold, heather, or white translucent-plastic panels; gold-finished aluminum frames are optional. Panels, 58" or 70" high, are made to fit standard 5' and 5'-6" recessed bathtubs. Wasco Products, Inc., Bay State Rd., Cambridge 38, Mass.

specialized equipment

Dri-Flo Linemaster: transparent-plastic disk, only 2¼" in diameter, provides accurate guide for drawing parallel lines, lettering guide lines, and cross hatching. Small, heavy-plastic instrument has slots to receive pencil or scriber point; 20 slots produce parallel lines from .016" to ½" apart in steps of decimals or fractions of inch. Dimensions are recessed and filled in with black; slots are positioned within .002" accuracy. Force Western, Inc., 216 W. Jackson Blvd., Chicago 6, Ill.

surfacing materials

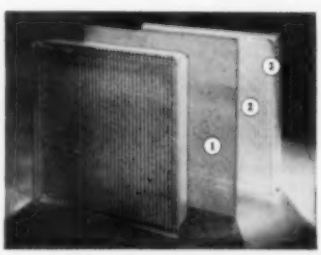
Golf-Club Tile: new ceramic-tile flooring is designed to give maximum traction—especially for metal-cleated shoes. Suitable for golf clubs, baseball locker rooms, and other recreational areas, tile is said to withstand hard wear and heavy traffic; rough-textured, color-fast tile is also claimed to resist moisture, acid, dirt, and grease. Available in 6"x6" or 4"x4" tiles ½" thick; made in 10 color tones including buffs, grays, reds, and dark brown. The Mosaic Tile Co., Zanesville, Ohio.



The block that says "*welcome*" to daylight... and "*keep out*" to heat and glare

When you hold a PC Suntrol Block up to an exposure where there is exceptional glare, you get an excellent demonstration of how this exclusive product answers difficult fenestration problems.

The picture above gives you a good idea of what you see. Notice that the *outer* faces of the Suntrol Blocks are *bright*, but on the inside faces, the raw light has been cut down to a soft, diffused glow. In addition to trapping glare, PC Suntrol Blocks reduce heat gain. To sum it up in percentages—glare reduced by 35% and heat gain by 25% compared to standard glass blocks.



Green, fibrous glass diffusing screen (1) filters light, reduces heat, divides block into two insulating cavities. Internal prisms (2) direct light upward, or diffuse it according to pattern. Exclusive Soft-Lite Edge (3) of opal glass eliminates glare through edge of block.

The glare and heat reducing benefits of PC Suntrol Blocks suggest a number of applications where light conditions are particularly severe . . . exposures facing paved school playground areas or overlooking white concrete parking lots, or locations where glare-creating snow lies on the ground for long periods.

PC Suntrol Blocks are available both in light-directing and light-diffusing patterns. Just recently an 8″ size has been introduced to supplement the 12″ unit to give the architect added design flexibility.

Write for more information. Address Pittsburgh Corning Corporation, Dept. AC-96, One Gateway Center, Pittsburgh 22, Pennsylvania. In Canada: 57 Bloor St. W., Toronto, Ontario.

PC Suntrol* Glass Blocks

PITTSBURGH PC CORNING®

Also manufacturers of FOAMGLAS® insulation

*Suntrol Glass Blocks are an exclusive PC product.

books received

The Analysis Of Structures. N. J. Hoff. John Wiley & Sons, 440 Fourth Ave., New York, N.Y., 1956. 493 pp., illus., $9.50

Contemporary Farmhouses. Prepared by M. R. Hodgell. University of Illinois Press, Urbana, Ill., 1956. 22 pp., 24 Flexiplan drawings, $3.50

French Architecture. (First English translation.) Pierre Lavedan. Penguin Books, Inc., 3300 Clipper Mill Rd., Baltimore 11, Md., 1956. 304 pp., 64 pl., 95¢

Architects' Homes. Robert Winkler. Reinhold Publishing Corp., 430 Park Ave., New York, N.Y., 1956. 224 pp., illus., $10

Foundations: Design and Practice. Elwyn E. Seelye. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N. Y., 1956. 436 pp., illus., $16

Les Chapelles du Rosaire à Vence et de Notre-Dame-du-Haut à Ronchamp. Matisse-Le Corbusier. Editions du Cerf, Paris, France, 1955. Distributed in U.S. by Wittenborn and Company, 38 E. 57 St., New York, N.Y. 109 pp., illus., $8.50

outdoor possibilities

The Art Of Home Landscaping. *Garrett Eckbo. Dodge Books, 119 W. 40 St., New York 18, N.Y., 1956. 278 pp., illus., $5.95*

Home landscaping encompasses more than the planting of flowers and shrubs. This book skilfully shows that it involves considerably more; that it is planning, construction, and planting for achieving to the fullest, the highest possibilities of the outdoor living spaces.

Toward such ends, these pages offer a discussion of many of the contributing factors: earth grading, walks, terraces, walls, outdoor weather control structures—windbreaks, trellises, sun shades, enclosures—pools, planting and garden layout. Other features such as sculpture, lighting, and other means of enrichment are also considered.

The author wrote for the layman. The subject treatment is simple, easy to understand; but it is also skilled, sound, and satisfying. Architects will find here a source of many helpful ideas. LAWRENCE E. MAWN

"outdoor living rooms"

Landscaping for Western Living. *The Editors of Sunset Magazine. Lane Publishing Co., Menlo Park, Calif., 1956. 192 pp., illus., $2*

"Outdoor living" has long been an important ingredient in the much-heralded experience known as "western living." And no magazine has reported on it and encouraged it so fully and consistently as *Sunset* "the magazine of western living." Now, the editors of that magazine have put together in one profusely illustrated, paper-bound volume literally hundreds of details and examples of how back yards can be transformed into "outdoor living rooms." And very good examples they are, too—work of the leading western land-

(Continued on page 197)

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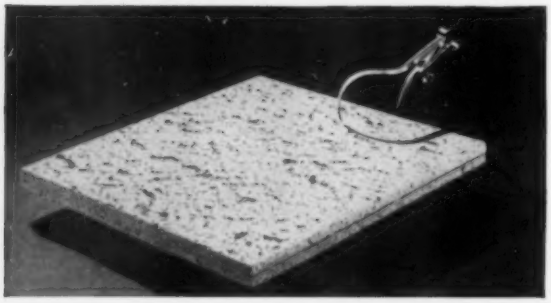
FOR AN ECONOMICAL ACOUSTICAL CEILING specify AUDITONE*, a lightweight, low-cost fiber acoustical tile available with a flame-resistant coating. Simple slotted or perforated designs complement any interior; provide high acoustical efficiency. Cleanable, bone-white finish is highly light-reflective.



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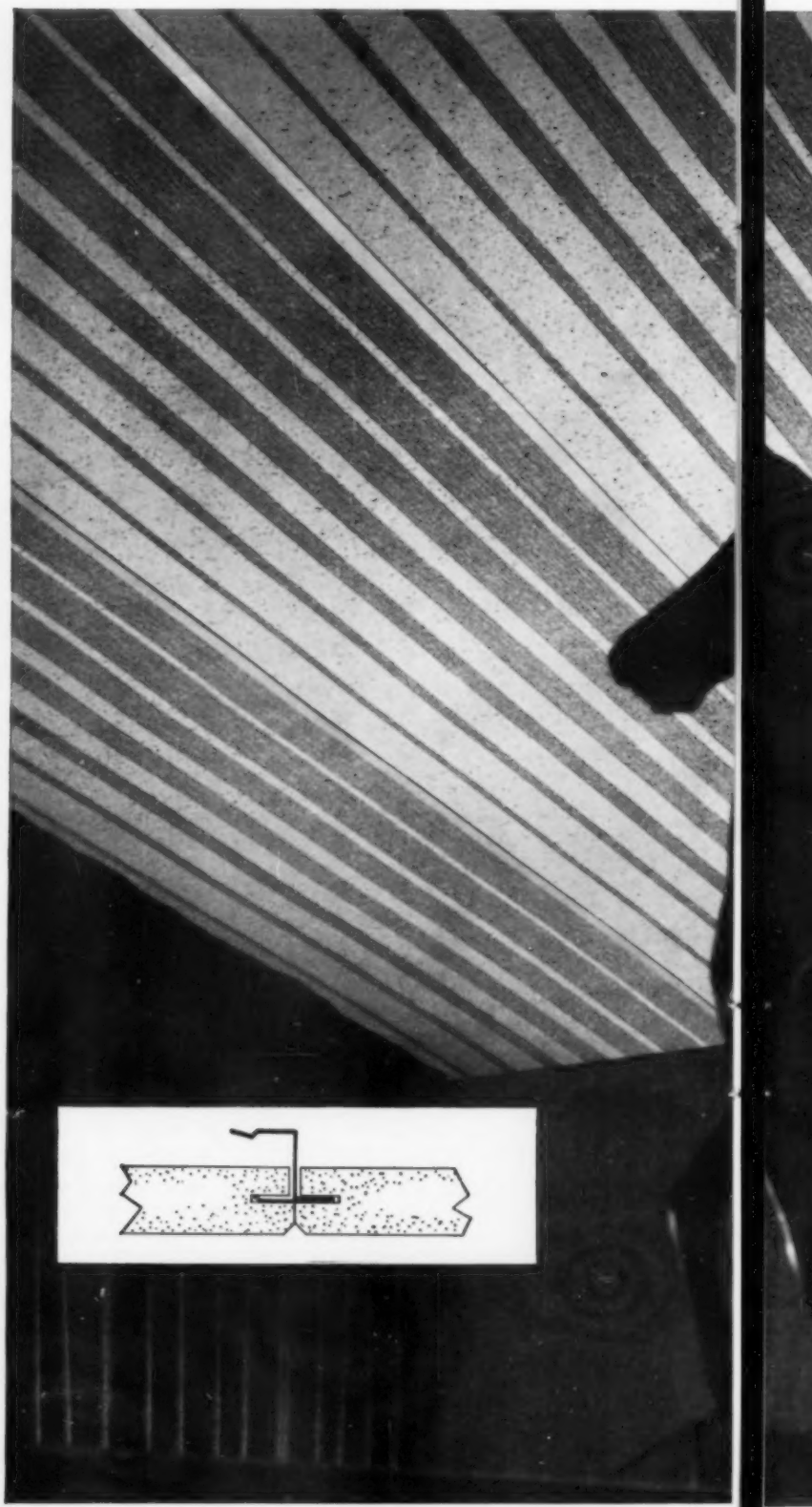
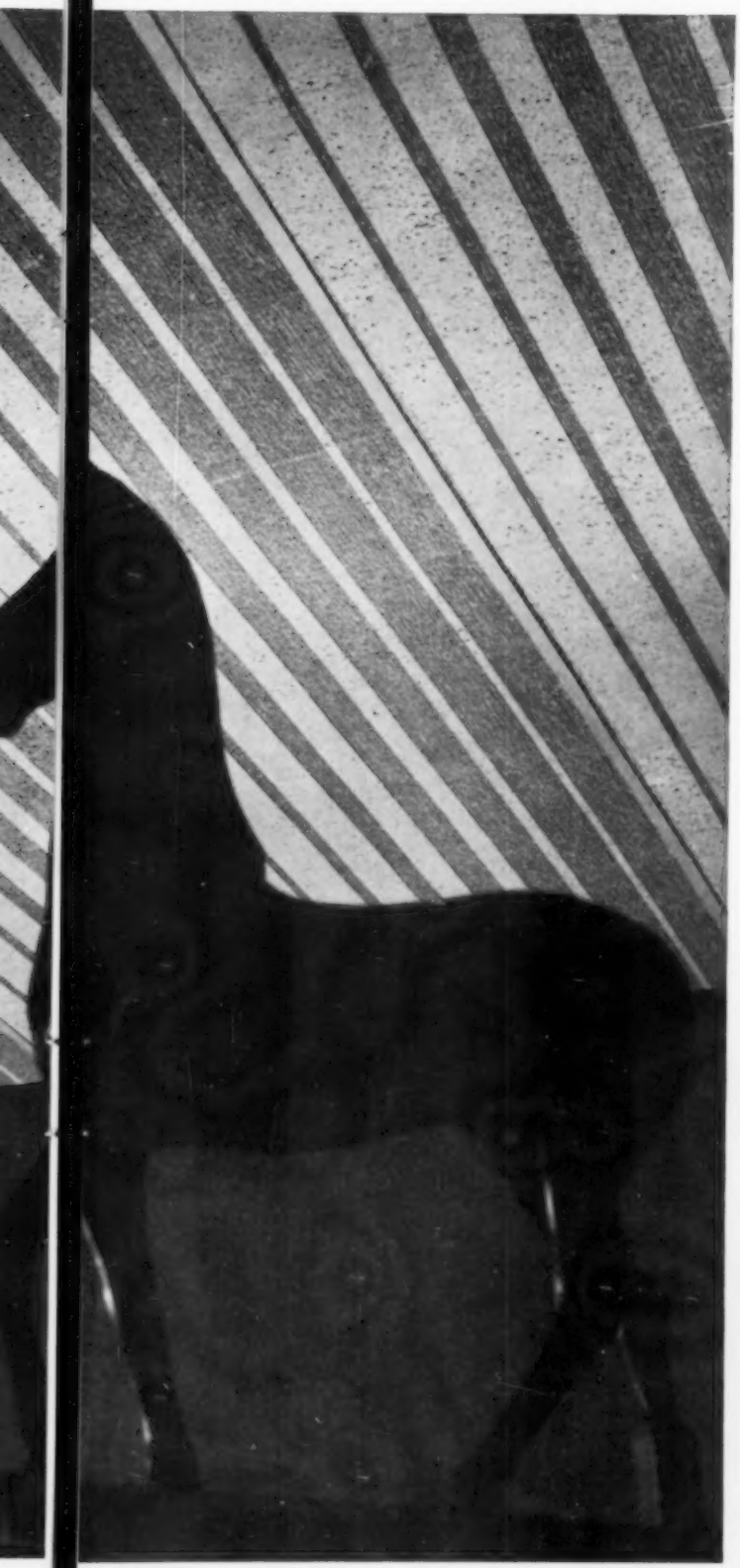


BEAUTIFUL WAY TO QUIET A ROOM is with MOTIF'D* ACOUSTONE* mineral acoustical tile, made by a special, patented U. S. G. process. Shown here is the Linea pattern—one of many original MOTIF'D design creations in highly efficient, incombustible

Creative materials for creative architecture



ACOUSTONE. Each has a distinctive appearance, and a highly light-reflective surface. Installed with the concealed Z-Spline System (see detail), services above the ceiling are completely out of sight, yet readily accessible.

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Variety of acoustical materials and suspension systems provide highly efficient sound control and permit flexibility of ceiling design

In the field of sound control, no other company makes more significant contributions than United States Gypsum, originator of mineral acoustical tile. Shown on these pages are just a few examples of the many new materials and systems that U.S.G. research is constantly developing to keep pace with the latest trends in architectural design.

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CITY_____ STATE_____

Shreveport's ultra-modern Beck Building boasts colored aluminum walls, music in the elevators—and an ingenious air conditioning system that . . .

cools on the sunny side, heats on the shadow side

"We built the Henry C. Beck Building with the thought of providing custom-made office space for tenants," relates Building Manager Edward E. McClung. "Our luxurious wood-paneled offices, mosaic-tiled lobby, music-filled elevators, and our flexible air conditioning system are examples.

"Since the exterior walls expose nearly an acre of glass to the hot sun, temperatures rise as much as 20° around the perimeter of the building. To compensate for this difference, and satisfy all the tenants, our architects and engineers devised a dual air conditioning setup: a peripheral system cools the sunny side of the building and heats the shadow side, when necessary; an interior system maintains comfortable air conditions in inside offices.

"Selected on the basis of durability, design, and past performance, American Blower air handling and conditioning equipment is a major factor in our dual system," concludes Manager McClung. "American Blower offices in Dallas and New Orleans helped us coordinate delivery between our Texas and Louisiana contractors."

If your plans include air conditioning – for a large-scale central or zone system, or a system for a smaller store, showroom or factory – call our nearest branch office for friendly assistance. American Blower Corporation, Detroit 32, Michigan. In Canada, look for Canadian Sirocco products.

Henry C. Beck Building, Shreveport, La. . Owners: Travis-Edwards, Inc., Shreveport; Architects: Neild-Somdal, Shreveport; Consulting Engineers: Reg Taylor and Associates, Houston; General Contractors: Henry C. Beck Construction Co., Dallas; Mech. Contractors: James F. O'Neil Co., Inc., New Orleans.

AMERICAN BLOWER

Division of AMERICAN-Standard

Air conditioning equipment for every business

Memorial Chapel in the Beck Building, a non-denominational "Place of Prayer and Meditation for All," is air conditioned by American Blower.

Widely varying air conditioning needs of building's shops – a florist (shown), a barber, and a bank—are efficiently handled by American Blower equipment.

Building Supt. C. W. McCormick, American Blower's I. A. Lindberg, and Building Mgr. E. E. McClung worked together during installation of equipment.

reviews

(Continued from page 192)

scape architects. Though the projects shown all occur in the West, the principles have universal application. For the architect who is called on to plan the site along with the house, it should prove to be a practical and stimulating reference book. G.A.S.

built for themselves

Architects' Homes. *Robert Winkler. Reinhold Publishing Corp., 430 Park Ave., New York, N.Y., 1956. 224 pp., illus., $10*

This is a collection of architects' homes. It shows what architects in many parts of the world have built for their own occupancy. Most of the residences are in Europe; some are in the United States, Mexico, South America; and one is in Japan.

The total, net impression is good and a few of the residences are outstanding. Some are examples of the International style; some lack distinction; none is devoid of interest.

Each home is illustrated with plans and pictures. The text is in English, French, and German.

LAWRENCE E. MAWN

what to use

Household Equipment. *Fourth Edition. Louise Jenison Peet and Lenore Sater Thye. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y., 1955. 444 pp., illus., $6*

While this survey of the materials, equipment, and appliances used in homemaking is particularly valuable for the woman who uses them daily, it might also be well for architects, interior designers, and industrial designers to consider the concise evaluation of each piece of equipment presented by the authors—both well versed on their subject.

Here, each item of household equipment is analyzed from the

(Continued on page 203)

They're Carrying Daylight! Quickly and easily, this prefabricated Wascolite Skydome will be placed over the roof-opening to bring softly diffused daylight into another interior.

Thousands of installations from coast to coast prove that the famous Wascolite Skydome is one of the most useful building developments in years. Made of shatter-resistant Wascolite Acrylic plastic, framed in welded, weather-tight aluminum. Once installed, the Skydome provides trouble-free service for years.

Investigate the full advantages of the Wascolite Daylighting-plus line: Ventdomes, Airdomes, Ceiling Domes, Pyrodomes. Send for latest 12-page Wascolite catalog.

Find out about beautiful, beautiful Acrylite. This new structural material comes in single sheets of rugged acrylic plastic with glamourous embedments of leaves, butterflies, ferns, fabrics, straw. Write today for illustrated 36-page book containing actual samples and suggesting countless uses.

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CREDITS: Case No. 17 Arts & Architecture house—Photography, Jason Hailey

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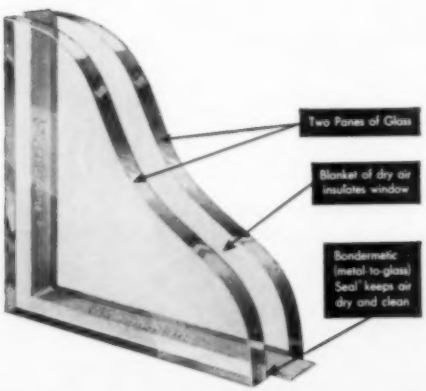
These characteristics give architects greater latitude in designing buildings with large expanses of glass. Learn more about *Thermopane* and its qualities. Send the coupon, or call your L·O·F Distributor.



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Technical information is available to help architects and engineers design for the most effective and most economical performance of *Thermopane* insulating glass. It is all in our *Thermopane* Manual which will be sent on request. (See coupon below.)

Thermopane is sold by local L·O·F Glass Distributors and Dealers, listed under "Glass" in yellow pages of phone books.

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for freedom
from distortion

You have only to look closely at the sliding door shown here, to see why *Parallel-O-Plate* Glass was used. Even at the extreme angle, there's not a wiggle or waver in the balusters outside. That's a tough test.

L·O·F *Parallel-O-Plate* Glass is the most distortion-free (the *only* twin-ground) plate glass made in America. Yet, in most localities, it costs no more than ordinary plate glass. Wouldn't it pay to specify it for all plate glass installations?

For further information, call your L·O·F Distributor or Dealer, or write Department 8396, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

Beverly Hilton Hotel in Los Angeles.
Architect: Welton Becket & Associates, Los Angeles.

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Skyceil "WALL-TO-WALL"

The perfect approach to complete area illumination—tailored to meet the architectural irregularities of any ceiling. It is, however, designed so that all those irregularities disappear into a smooth, flowing ceiling of soft, glare-free light. Whether the area is a small office, a lobby or a large department store—SKYCEIL will solve the problem. Available in two types . . .

SKYCEIL 1

The all silvered bowl incandescent system utilizing special Skylike 24" square louvered units. Reflector is designed to provide upward light which is deflected by the ceiling to softly illuminate the adjacent plastic panels.

SKYCEIL 2

A system in which the standard Skyceil unit (without upward lighting component) and supplementary, unseen fluorescent lighting above the Skyceil grid are combined to provide overall lighting of desired footcandle level.

Skyceil is available with metal eggcrate louver, 1 or 8 piece plastic diffusers.

Skysector "BY-THE-YARD"

Provides the same effect as SKYCEIL but at a sizeable saving in installation. SKYSECTOR is designed to utilize the largest area of a ceiling without being wall-to-wall. An ingenious method of suspension makes this possible and provides a soft glowing panel of diffused light around its perimeter in place of the costly-to-install panel border. For those who desire the effect of complete ceiling illumination that is lower in price, SKYSECTOR, the "buy-it-by-the-yard" concept is the perfect answer.

Skysector system is available with either Skyceil 1 or Skyceil 2 units thereby providing the same lighting quality and efficiency. For complete details fill in and mail coupon below.

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Dear Sirs:

I would like additional information on the Skylike Systems of Area Illumination and have indicated below the one(s) in which I am interested.

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CALIFORNIA REDWOOD

Individual landscaping for tract homes

Home-buyers in Sacramento's Foothill Farms subdivision have the unusual opportunity of planning their landscaping with professional assistance. This free service consists of a 54-page How-to-get-started Guide, featuring many variations of redwood structures which are demonstrated in seven model outdoor garden rooms. All were designed by this well-known San Francisco landscape architect.

MORLEY BAER

Douglas Baylis' interesting commission called for a variety of plans—complete with construction and planting information—which enable new owners to develop luxurious outdoor living space at moderate cost.

Besides wide experience in subdivision developments, his professional practice includes numerous private gardens, school grounds, parks, industrial plants, and designs for the San Mateo County Fair Garden Show.

Baylis has lectured at Stanford University, and the University of California, and is consultant to several national magazines. Recently he was appointed Supervising Landscape Architect to the University of California, Berkeley.

CRA

CALIFORNIA REDWOOD ASSOCIATION

576 Sacramento Street, San Francisco 11, California

reviews

(Continued from page 197)

practical point of view: factors to look for before making a purchase; how to use the item to best advantage; how will it stand up under continued use; and how should it be maintained. The same pragmatic outlook is applied to the subject of kitchen planning. Fundamental concepts of kitchen layout are reviewed and basic information—not found in many other sources—is given on storage cabinets, counter heights, materials, and placement of eating areas in the kitchen.

Although it is difficult to keep pace with an industry which issues new models every year, this latest edition of *Household Equipment* has been revised to include data on built-in ovens and ranges, portable broilers, home air-conditioning units, and new trends in lighting. However, it would also be helpful to the designer to have an evaluation by these authors (perhaps in the form of a supplement) on several more-recent developments in the field, such as microwave ovens, remote-control switching devices, centralized vacuum-cleaning systems, and on the increased use of tile for work surfaces and flooring. L.G.

advice on renewal

How Localities Can Develop a Workable Program for Urban Renewal. *Housing and Home Finance Agency. U.S. Government Printing Office, Washington 25, D.C., 1955. 16 pp., 10¢*

Not every community marred by blight is eligible for Federal assistance. Before it can even be considered, the community must display active interest in its own betterment and meet the particular requirements established by the HHFA, one of which is a workable program for urban renewal.

The Government has published

(Continued on page 206)

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24 COLORS
MARS-LUMOCHROM
possible only with
MARS-LUMOCHROM
All colors blueprint perfectly, making color-drafting possible.
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STAEDTLER also proudly introduces the Mars-Pocket-Technico for field use, the Mars "Draftsman's" Pencil Sharpener with the adjustable point length feature, and the efficient, clean Mars lead sharpener. All available—along with the established standards: Mars-Lumograph black graphite drafting pencils, Mars-Technico lead holder and leads, and Tradition-Aquarell painting pencils—at all leading art material and drafting supply dealers.
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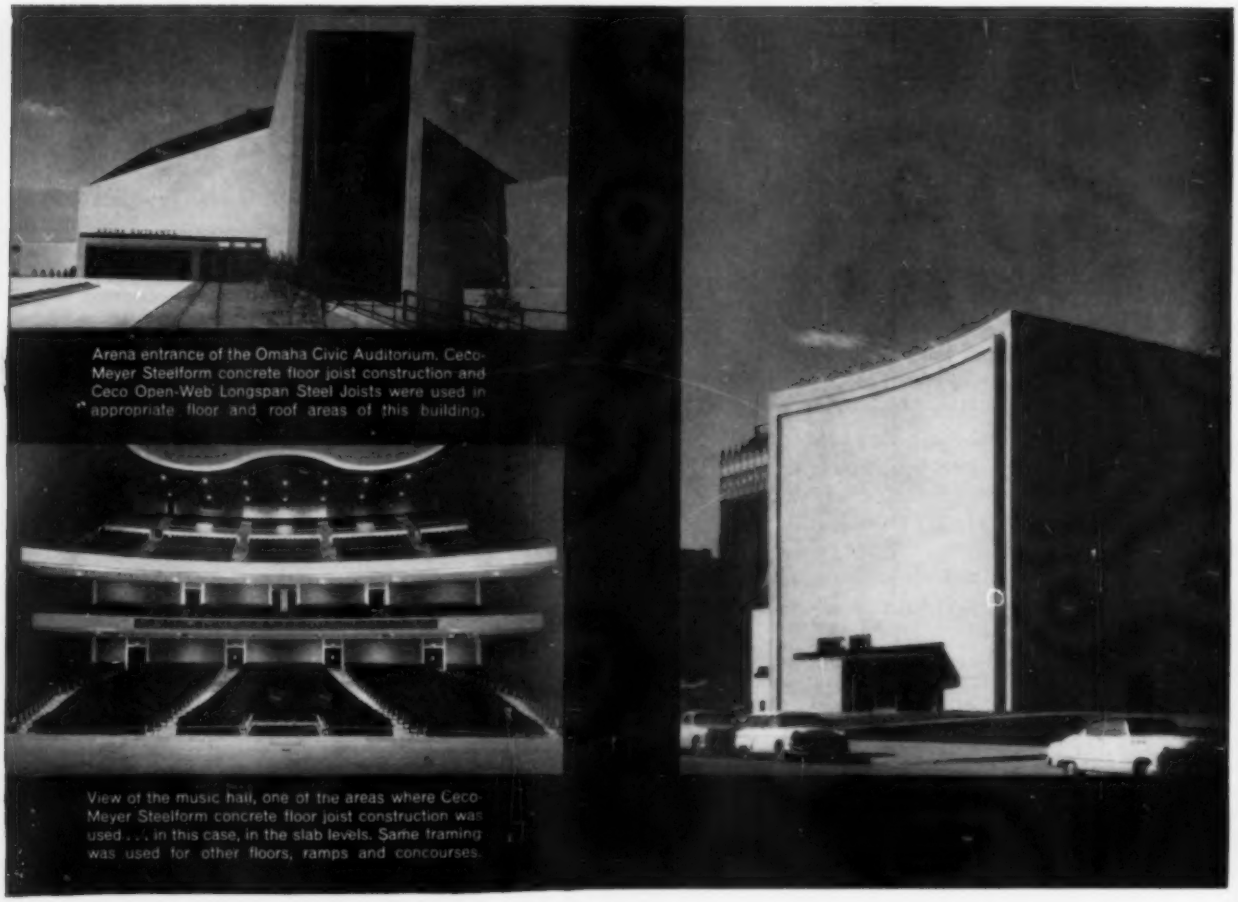


Arena entrance of the Omaha Civic Auditorium. Ceco-Meyer Steelform concrete floor joist construction and Ceco Open-Web Longspan Steel Joists were used in appropriate floor and roof areas of this building.

View of the music hall, one of the areas where Ceco-Meyer Steelform concrete floor joist construction was used . . . in this case, in the slab levels. Same framing was used for other floors, ramps and concourses.

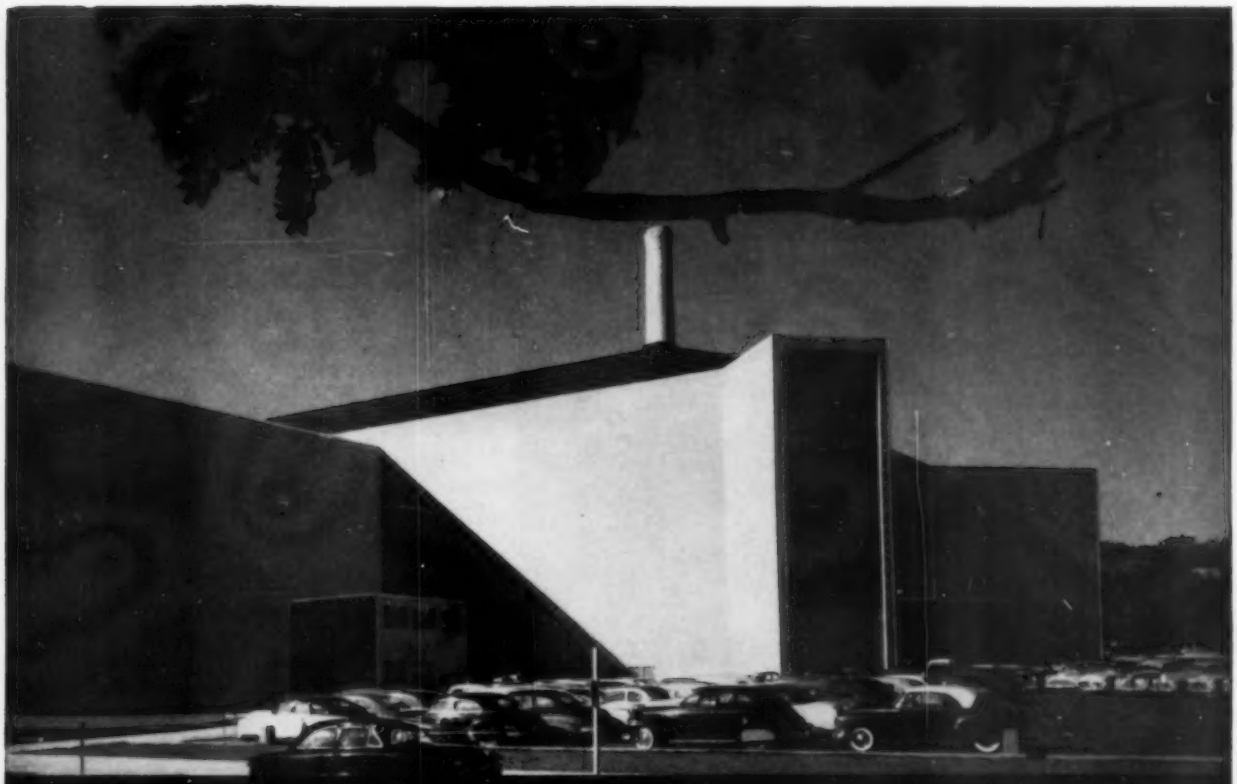
FRAMING METHODS CUT DEADLOAD 30%... SAVE TIME...

PRODUCE RIGID FLOORS AND ROOFS

Ceco helps architects, engineers and contractors meet schedules for finest buildings. It takes a lot of material to build a safe public structure of ten million cubic feet. Weight could be a problem. That was the condition confronting Leo A. Daly Company, architects and engineers, in designing the Omaha Civic Auditorium. They determined 30% in concrete load could be saved by using Ceco-Meyer Steelform concrete joist construction for floors, concourses, ramps and balconies. Similar weight savings were made by using Ceco Open-Web Longspan Steel Joists in areas of the roof. Architect Daly put it this way:

"Metal pan rib floors were used where loading and span permitted. Though the weight is light, the depth of the floor produces great rigidity. Formwork is economical, requiring only a simple centering board for the soffit form under each rib or joist. Longspan Steel Joists used in appropriate roof areas cut weight, too, as compared to heavier standard truss and purlin construction."

When Peter Kiewit Sons' Company set up the building schedule, Ceco service went into action, delivering all material as needed—on time. For the best in floor framing methods and service, call in your Ceco Engineer.



This is the Omaha Civic Auditorium, showing the music hall entrance at left and the exhibit hall entrance at right. Leo A. Daly Company, Architects and Engineers; Peter Kiewit Sons' Company, General Contractors.

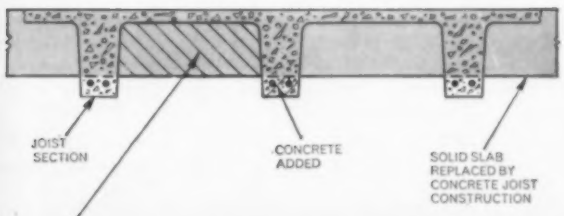
CECO STEEL

CECO STEEL PRODUCTS CORPORATION

Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 West 26th Street, Chicago 50, Illinois

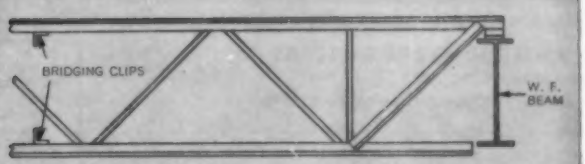
IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

JOIST SECTION SUPERIMPOSED ON SOLID SLAB
OF EQUAL LIVE LOAD CAPACITY



HERE'S THE ECONOMY OF CONCRETE JOIST CONSTRUCTION

Ineffective concrete eliminated by a shape of section which allows maximum depth for rigidity and minimum deflection. Savings in material and dead weight thus result in better structural performance.



STEEL JOIST CONSTRUCTION SAVES WEIGHT

Open-Web Steel Joists comprise the lightest standard construction and cut framing time by months, compared to heavier, slower methods. They permit wide open floor areas with fewer columns.

Spikes reduce slipping on ball diamonds,

but ordinary shoes are SAFE SHOES

on low cost A.W. SUPER-DIAMOND

ECONOMY ROLLED STEEL FLOOR PLATE

Ordinary flat-soled shoes—material-handling equipment, too—move safely over SUPER-DIAMOND's traction treads—from any angle of approach. The raised diamond pattern—40 steel diamonds to the step—has been exclusively designed and engineered for maximum foot safety at minimum cost.

No other floor plate can match A.W. SUPER-DIAMOND *for safety, durability and easy maintenance at so low a cost.*

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For plants where oil, water and grease raise special problems of slipping accidents, we suggest a check on the special qualities of A.W. ALGRIP . . . the world's only abrasive rolled steel flooring.

A.W.

reviews

(Continued from page 203)

this pamphlet to outline the necessary program and describe the procedure for submitting it. The pamphlet discusses the fundamental objectives, which include minimum standards of health and safety, a comprehensive community plan, analyses of blight conditions, and effective administration. A list of Regional Offices in U.S. and territories is provided. R.C.

rich and rewarding

Formes, Composition Et Lois D'Harmonie. *Andre Lurcat. Vincent, Freal & Cie., 4 rue des Beaux-Arts, Paris, France, 1955. 520 pp., illus., $16.50 (paper bound, $14.75)*

This is the fourth volume of a five-volume work. The whole constitutes a monumental work on the esthetics of architectural design.

The French text offers a detailed study (in this volume) of the principles and elements of architectural composition. Numerous examples of applications of each augment and enhance the extremely informative text.

This rich and rewarding volume will, have strong appeal for esthetes, students, and scholars—among whom, unfortunately, not many architects will be found.

LAWRENCE E. MAWN

foreign opportunities

Study Abroad. *Vol. 7, 1955-56. United Nations Educational, Scientific and Cultural Organization, 19, Avenue Kleber, Paris-16e, France. Distributed in U. S. by Columbia University Press, 2960 Broadway, New York 27, N. Y., 1955. 703 pp., $2*

This International Handbook of fellowships, scholarships, and educational exchange offers many opportunities for professional persons as

(Continued on page 210)

Easy cure for "look-alike" houses ...CURTIS window variety

EXTRA DISTINCTION AT MODEST COST is achieved with Curtis Silentite Convertible wood windows—shown here used as awning sash with picture window. Used upright, these versatile windows serve as efficient casements, too. Curtis Convertibles can be stacked both in width and height into weather-tight multiple units, easy to install. More than 1000 combinations possible—giving you almost unlimited scope in planning.

DOUBLE-HUNGS CAN BE DIFFERENT when used in groups or in combination with a picture window. Curtis Silentite double-hung wood window units are available in several sash styles—all extremely weather-tight to cut heating and air conditioning costs. Note the Curtis bow window at the far right—made up of standard Curtis casement units.

CASEMENTS ADD AN EXTRA NOTE OF STYLE—especially when they are Curtis Silentite casements, available in several different styles for any home, any room. These casements are *really* weather-tight—they can save up to 16% of heating or air conditioning costs. A patented operator holds the casement rigidly in any position—no swinging.

Curtis Silentite windows come in many different styles and are available from lumber and woodwork dealers in most parts of the country. Complete information and specifications for these *guaranteed* windows are yours on request—mail the coupon.

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WOODWORK • *heart of the home*

1865 CURTIS WOODWORK SILENTITE 1956—TM the "insulated" window

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The over-all reliability of a 77 year old, nationally recognized, financially responsible company with complete, modern manufacturing facilities; supported by a nation-wide sales engineering and service organization.

Bayley Projected Windows (and Bayley Curtain-Walls and Window-Walls) — in aluminum and steel — have had a major influence on today's trend from the old conventional to the modern in hospitals, homes and institutions. If you are not familiar with Bayley Details see Sweet's or write; or call in your local Bayley Representative.

Bayley Projected Windows in the St. Andrew Home, Chicago suburb. Architect, Leo Strelka, Oak Park, Ill,; Builder, John Gebhardt & Son, Chicago, Ill.

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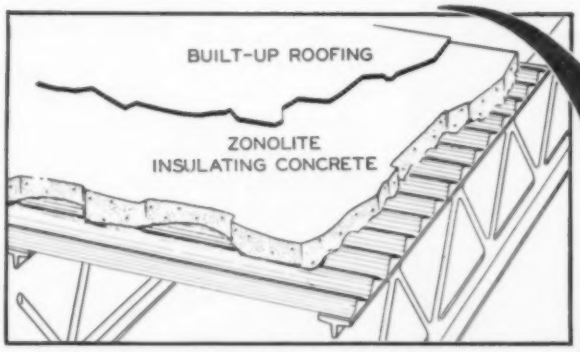
How Zonolite® Vermiculite CONCRETE
Poured-In-Place Over Corrugated Metal

NOW MAKES POSSIBLE LOW COST • LIGHTWEIGHT • FIRESAFE INSULATING ROOF DECKS!



Zonolite concrete over corrugated metal... Diagram of roof deck just completed on huge shopper's mart in Bridgeville, Pennsylvania.

Pouring 300,000 sq. ft. of vermiculite concrete gets underway.

This type of joist used where span exceeded 25 ft.

Placing corrugated metal.

Side clips fasten corrugated metal to bar joists.

Mixermobile. Zonolite concrete being hoisted to roof.

Easy pouring from concrete buggy. Bulb tee used for screed.

View on the W. T. Grant Co. store—3" Zonolite concrete over metal. Super fire-safe.

Construction Superintendent says this deck went on 20% faster.

Get This FREE BOOK

Just off the press. A book you'll want for quick reference... gives details of many roof deck systems... including design data, section drawings, ratings, etc. No obligation. Mail coupon.

The construction industry has found the new Zonolite roof deck systems to be *superior to all others.* This shopper's mart in Pennsylvania (300,000 sq. ft. of Zonolite deck and marquees) went on 20% faster than another type deck used on part of the same job. Also, it was lighter weight and excelled in fire-safety, saving $1,000 a year on insurance premiums. This Zonolite-over-corrugated-steel and the four other systems shown here are only a small portion of the combinations now made possible. Send for free booklet "Systems of Lightweight Construction."

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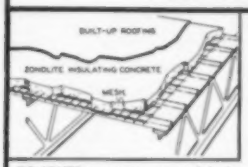
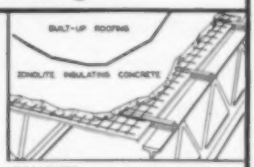
These Lightweight Decks Excel in Fire-safety, Permanence!

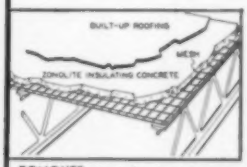
And Zonolite Is Adaptable To Any Roof Deck Design



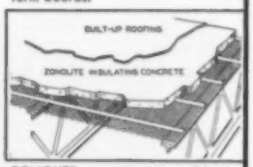
ZONOLITE concrete over metal deck.



ZONOLITE concrete over various form boards.



ZONOLITE concrete over paper-backed wire lath.



ZONOLITE concrete over ribbed metal lath.

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City_____ **Zone**_____ **State**_____

Architect_____ **Builder**_____ **Other**_____

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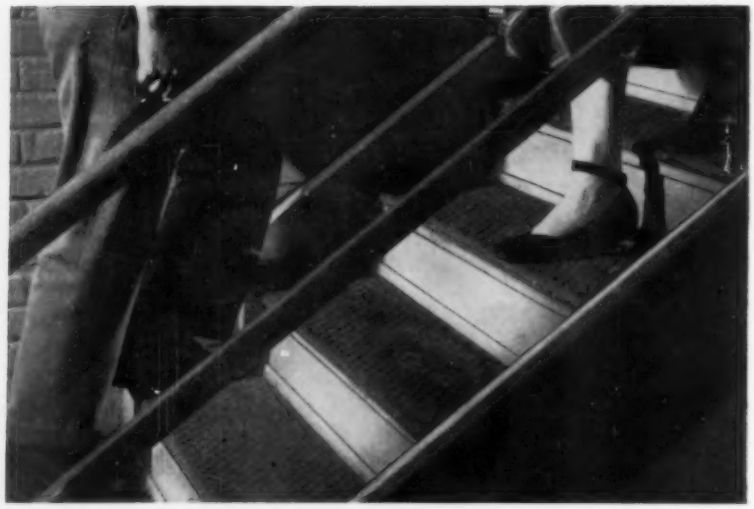
give 33 years of service at RCA

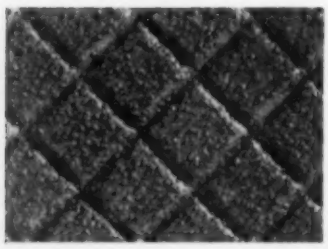


Here's proof of Feralun durability! These treads were installed in the Camden, New Jersey plant of the Radio Corporation of America, *when the building was erected in 1923—over 33 years ago.* After recent inspection, RCA reports, "The Feralun Treads are still in use and have given us satisfactory service to date."

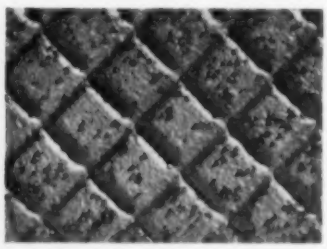
Why FERALUN provides lasting safety

This is a typical example of the long life and economy of Feralun Safety Treads. The reason? Quality manufacturing methods assure full and even distribution of abrasive particles throughout the wearing surface. In fact, American Abrasive Metals Company is the *only* manufacturer who guarantees *the amount of distribution of abrasive grains* throughout their treads.

For maximum safety and longest life, insist on Feralun for treads, nosings, thresholds, floor plates and elevator sills. See Sweet's Catalog 1956, 13b/Am.



Here is an unretouched photograph of a *Feralun* tread taken after acid treatment. (Acid is used to eat away the metal base so as to isolate the actual abrasive content of the tread.) Note the full and even distribution of abrasive—for greater, safety, longer wear.



Here is an unretouched photograph of an abrasive tread, purchased on the open market of the type often offered as an equal of Feralun, after the identical acid test. Note the meager amount of abrasive and spotty distribution.

AMERICAN ABRASIVE METALS CO., IRVINGTON 11, N. J.

reviews

(Continued from page 206)

well as for students. In it are indexed exchange professorships, lecturing posts, research fellowships on the postgraduate level, and scholarships—in all fields of study—for more than 100 participating countries. Grants from the United Nations, international organizations, governments, and private groups are covered; however, a check of awards offered in the field of architecture indicates that not all those sponsored by private organizations are included.

General background material describing study abroad is printed in English, French, and Spanish; information on individual awards is printed in one of the three, depending on the language of the particular nation. L.G.

making ceramic tile

Quality In Tile. *Film. Pomona Tile Manufacturing Company, Los Angeles, Calif., 1956.*

This film, which runs for half an hour, shows the production of ceramic tile from the mining of talc, a major ingredient, through the manufacturing plant to the customer. Highlighting the movie is the method of quality control of tile at Pomona plants, where more than thirty quality checks are made before the product leaves the plant. The Company plans to circulate the film to its various branches for showings to architectural and contractor groups in its distributing area. M. S.

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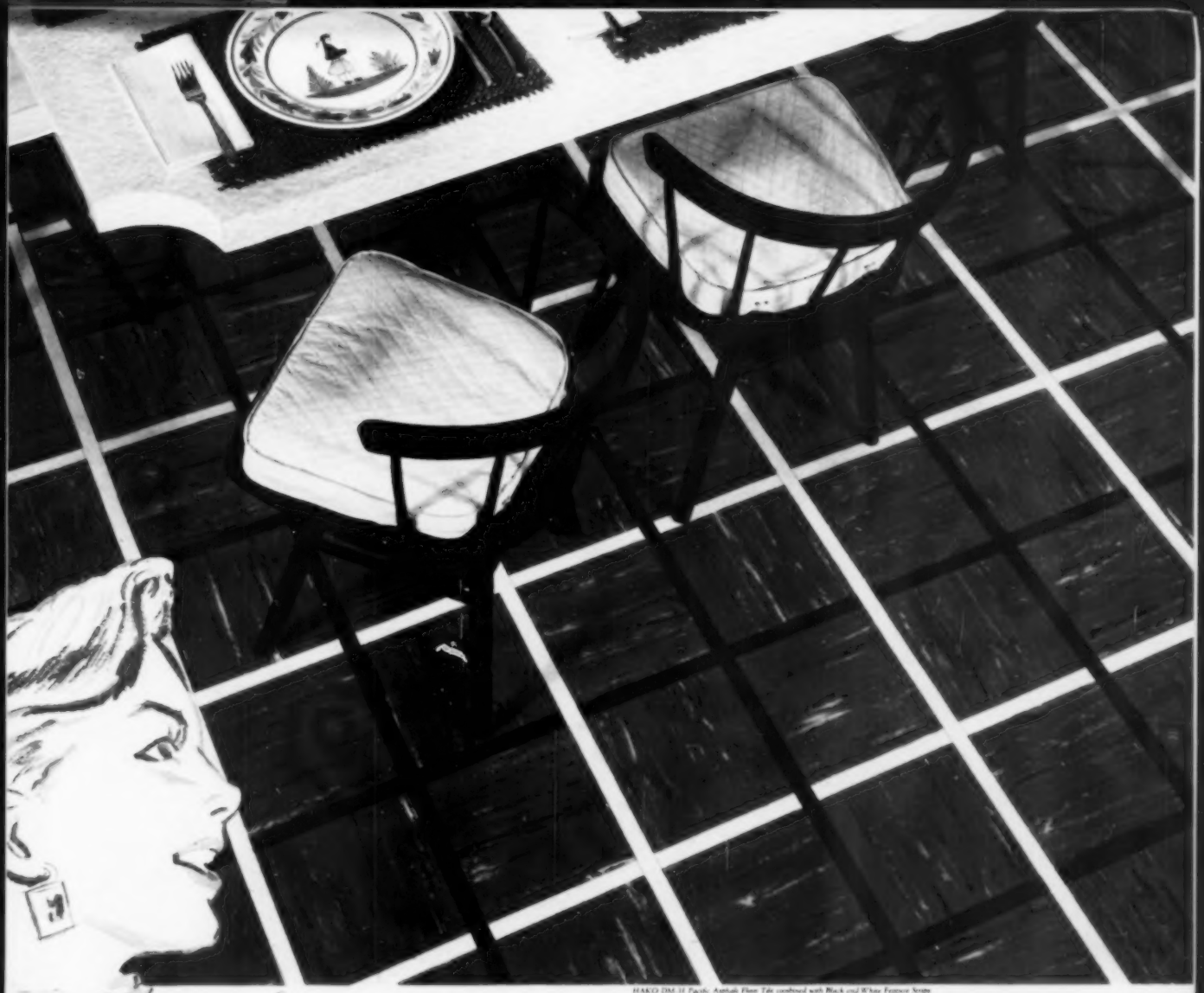

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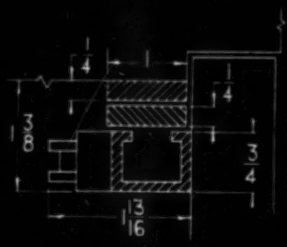

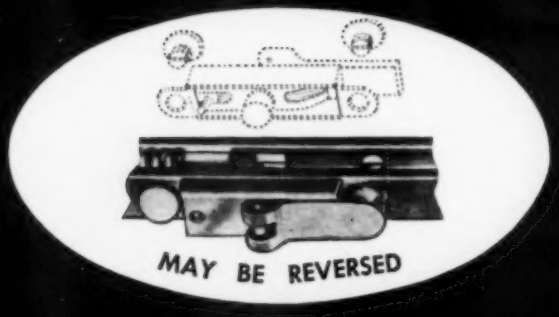

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For every 1,000 square feet of floor space in heavy traffic areas, you can actually save your clients an average of $194 a year, or 50.7% on maintenance costs by carpeting those areas.

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notices

fellowships

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WILLIS L. STEPHENS, Architect, 594 S. Edgewood Ave., Jacksonville, Fla.

OLIVER & SMITH, Architects; and WOODWARD, OLIVER, SMITH & ASSOCIATES, Architects-Engineers, 333 W. Freemason St., Norfolk, Va.

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CASPER S. NEER, Architect, 106 South Lee St., Alexandria, Va.

JAMES H. KENNEDY, Architect-City Planner, 905 First National Bank Building, Tampa, Fla.

ALFRED WATTS GRANT & ASSOCIATES, Architects, 1640 Court Place, Denver, Colo., and 7½ E. Bijou St., Colorado Springs, Colo.

J. MARTIN ROSSE, Architect, 45 Second St., San Francisco, Calif.

(Continued on page 217)

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WSP

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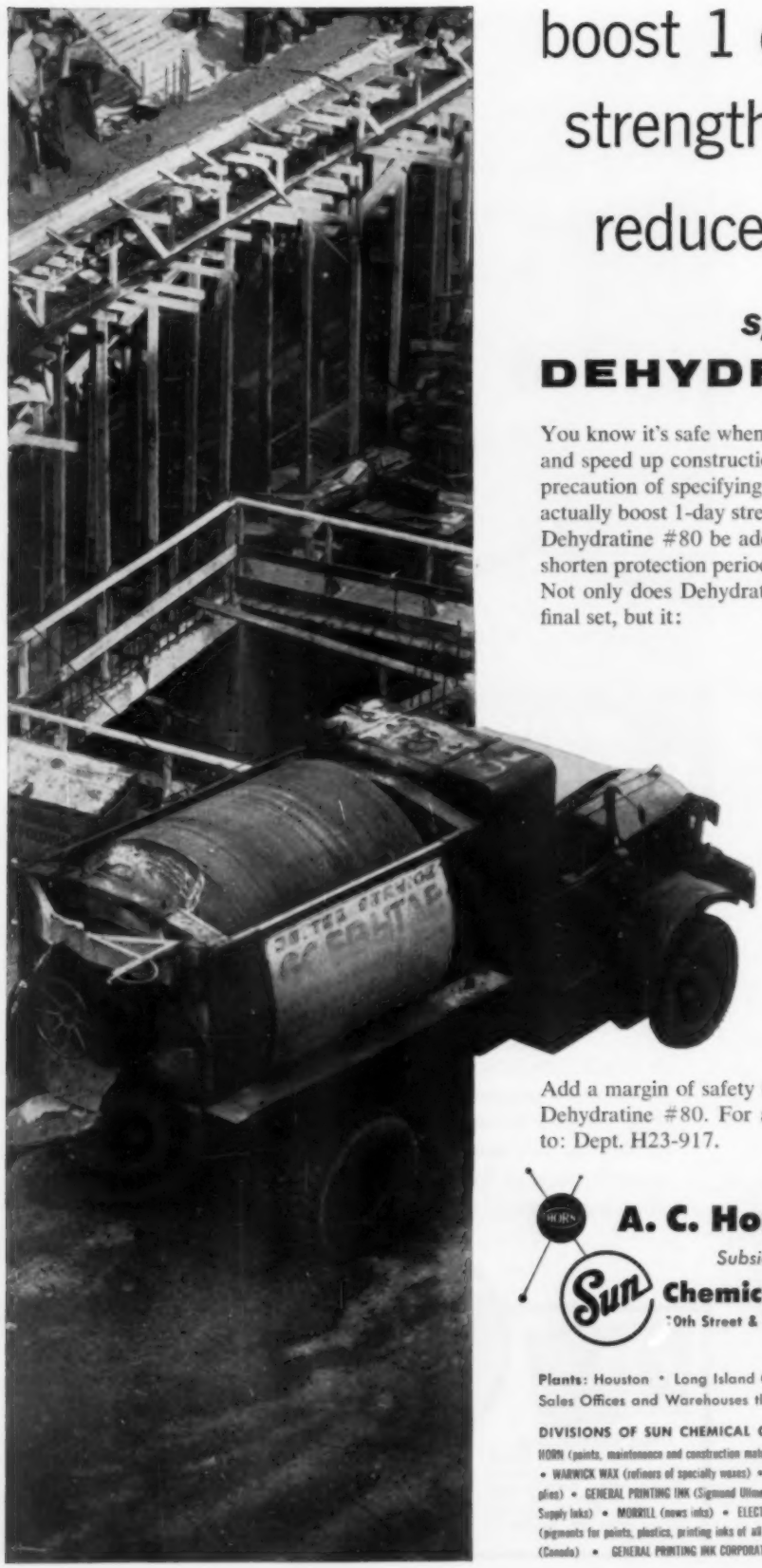

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You know it's safe when contractors remove forms early . . . and speed up construction generally . . . if you've taken the precaution of specifying Horn's Dehydratine #80. You can actually boost 1-day strength 300% by specifying that liquid Dehydratine #80 be added to your concrete mixtures. You shorten protection period and cut delays between operations. Not only does Dehydratine #80 accelerate both initial and final set, but it:

- saves setting time and promotes more even curing at low temperatures
- permits quicker finishing
- provides water repellency through increased density
- increases the workability of concrete and masonry mortar
- reduces shrinkage
- makes a harder, non-dusting surface
- improves curing

Add a margin of safety to all your concrete designs. Specify Dehydratine #80. For all the information you want, write to: Dept. H23-917.

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HORN (paints, maintenance and construction materials, industrial coatings) • WARWICK (textile and industrial chemicals) • WARWICK WAX (refiners of specialty waxes) • RUTHERFORD (lithographic equipment) • SUN SUPPLY (lithographic supplies) • GENERAL PRINTING INK (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • MORRILL (news inks) • ELECTRO-TECHNICAL PRODUCTS (coatings and plastics) • PIGMENTS DIVISION (pigments for paints, plastics, printing inks of all kinds) • OVERSEAS DIVISION (export) • A. C. HORN COMPANY, LIMITED (Canada) • GENERAL PRINTING INK CORPORATION OF CANADA, LIMITED • FUCHS & LANG de MEXICO, S.A. de C.V.

notices

(Continued from page 215)

new offices, partnerships

JOHN R. SNELL & ASSOCIATES, Consulting Engineers, 6103 Lake Lansing Dr., Haslett, Mich.

MORTIMER H. HAWKINS, Architect, has been admitted to full partnership in firm of JENSEN & HALSTEAD, Architects-Engineers, 228 N. La Salle St., Chicago, Ill. Firm will be known as JENSEN, HALSTEAD & HAWKINS.

D'ANSON ISELY and ROBERT D. MACKINNON, JR., Architects, have become partners in firm of KETCHUM, GINA & SHARP, Architects, 227 E. 44 St., New York, N. Y.

CHATELAIN, GAUGER & NOLAN, Architects-Engineers, 1632 K St., N.W., Washington, D.C.

COCHRAN, STEPHENSON & WING, Architects, 925 N. Charles St., Baltimore, Md.

NORTHEAST PLANNING ASSOCIATES, City Planners-Architects-Landscape Architects, Charlotte, Vt., formed by RODERICK CARMOSINO, JULIAN E. KULSKI, GARFIELD LANGWORTHY.

HENRY KOHLER, Architect, 115 E. 40 St., New York, N. Y.

CLIFFORD E. GIBBS, Architect, 7322 Porter Rd., Grand Blanc, Mich.

CUNNINGHAM & BOROUGHS, Architects, 309 Pharr Road, N.E., Atlanta, Ga., and Thompson Bridge Rd., Gainesville, Ga.

ROLAND LOGAN RUSSELL, Architect, 333 N. La Cienega Blvd., Los Angeles, Calif.

FLETCHER & FLETCHER, Architects, 2117 N. Charles St., Baltimore, Md.

HOPKINS, PFEIFFER & FENHAGEN, Architects, 10 E. Mulberry St., Baltimore, Md.

CONSTRUCTION SURVEY COOPERATIVE, Architectural Engineering Consultants, 2920 Beverly Blvd., Los Angeles 57, Calif.

(Continued on page 219)

IT'S EASY to add new convenience and distinction to your homes with fir plywood built-ins. Storage cabinets, wardrobe or built-in furniture—fir plywood is the logical material for *any* built-in. No other material is so adaptable to specific design and space requirements. Fir plywood is light, strong, good-looking. Takes any finish. Works quickly, easily, simplifies framing—for on-job construction or shop-fabricated units.

FREE PORTFOLIO OF FIR PLYWOOD INTERIORS
File folder assembly includes design ideas, specifications, application data. Write (USA only) Douglas Fir Plywood Assoc. Dept. PA, Tacoma 2, Washington.

DFPA TESTED QUALITY

INSIST ON DFPA GRADEMARKS!
DFPA grademarks assure quality. Standard grades for interior finish are A-A, A-B and A-D (PlyPanel™). Special panels include overlaid plywood . . . "relief grain" (brushed, embossed and striated panels) . . . and Texture One-Eleven™ "grooved."

WSP

Plywood of other western softwoods available; look for this DFPA grademark.

STEEL JOIST CONSTRUCTION HELPS PROTECT NEW ST. PAUL STORE FROM FIRE HAZARD

This handsome new W. T. Grant store in downtown St. Paul measures 100 ft by 236 ft, with three sales floors – basement, first and second – and office and storage space on the third. The exterior is faced with glazed brick panels and marble trim, with polished granite used from awning height to sidewalk. One interesting phase of the store's construction was the need to go down 55 ft through old Mississippi River bottom to rest foundations on bedrock.

All three floors and the roof of the new store were built with Bethlehem Open-Web Steel Joists. In combination with poured floor slabs and plaster ceilings, steel joists give a fire-resistance of up to four hours, depending upon the thickness of the slab and the type of plaster used.

In addition, steel joists provide a non-warping, non-sagging construction, helping to hold down building maintenance to a minimum. They help reduce construction time, too, for they arrive at the job site fully fabricated, ready for instant placing. And the installation of lighting fixtures, piping and ductwork is simplified, for pipes and wires are run right through the open webs.

The new W. T. Grant store in St. Paul was designed by Thorshov & Cerny, Inc., architects and engineers, of Minneapolis. *General Contractor:* Standard Construction Co., of Minneapolis; *Steel Fabricator:* St. Paul Structural Steel Co., of St. Paul.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

notices

(Continued from page 217)

new offices, partnerships

Jack H. Hudson, Jr., Architect 1639 S. Lewis Place, Tulsa, Okla.

WILLIAM E. COOPER, Architect, 7 Johnathan Lane, Amsterdam, N.Y.

VICTOR A. CUSACK, Architect, has joined staff of HERTZKA & KNOWLES, Architects, San Francisco, Calif.

JAMES E. WHITEAKER, Architect, 8302 Broadway, San Antonio, Tex.

MAYS & PARKS, ASSOCIATES, Architects, Wright Building, 126 N. Main St., High Point, N. C.

ROBERT E. PLETTENBERG, Architect, 1300 Canyon Rd., Santa Fe, N. Mex.

DAY & THORSON, Architects, 610 Rood Ave., Grand Junction, Colo.

MURRAY S. COHEN, Architect, 210 E. 39 St., New York, N. Y.

EDWARD K. BRYANT has been made a Partner in firm of TIPPETTS-ABBETT-MCCARTHY-STRATTON, Engineers, 62 W. 47 St., New York, N. Y.

KEYES & LETHBRIDGE, Architects, 1300 Connecticut Ave., Washington 6, D.C.

SATTERLEE & SMITH, Architects, 3 Dupont Circle, Washington 6, D.C.

WINSTON ELTING, Architect, 25 E. Jackson, Chicago, Ill.

RAOUL LIVAUDAIS & ROBERT LOBDELL, Architects, Covington, La.

PETER G. HARNDEN ASSOCIATES, Architectural-Industrial Designers, Orgeval S.O., Paris, France.

TILLEMAN & HERRICK, Architects, 307 N. Broadway, Green Bay, Wis.

GLANKLER & BROADWELL, Architects-Engineers, 1006 Eighth St., Alexandria, La.

BROWN & SLEMMONS, Architects, 405 Crawford Bldg., Topeka, Kans.

F. J. WALSH, Consulting Engineers, 19 W. 34th St., New York 1, N.Y.

(Continued on page 221)

LIFT YOUR HOMES out of the ordinary with exciting Texture One-Eleven fir plywood paneling. Deep parallel grooves and subtle surface texture combine to form a striking feature for any home. Use this new vertical shadow-line plywood for feature walls, ceilings or built-ins. Texture One-Eleven goes up quickly, easily; shiplap edges neatly conceal vertical joints. Grooves are full ¼" deep, ⅜" wide...have sharp, clean-cut edges.

FREE PORTFOLIO OF FIR PLYWOOD INTERIORS
File folder assembly includes design ideas, specifications, application data. Write (USA only) Douglas Fir Plywood Assoc. Dept. PA, Tacoma 2, Washington.

DFPA® TESTED QUALITY

INSIST ON DFPA GRADEMARKS!
DFPA grademarks assure quality. Standard grades for interior finish are A-A, A-B and A-D (PlyPanel™). Special panels include overlaid plywood . . . "relief grain" (brushed, embossed and striated panels) . . . and Texture One-Eleven® "grooved."

WSP

Plywood of other western softwoods available; look for this DFPA grademark.

The "all-weather window" —already in its frame

...the first pre-framed glass-louvered jalousie!

FIGURE 22

Nova again leads the field with its top-quality Nova Jalousie, already installed in a wood window frame, ready to place in the opening. In new construction or in the replacement of old-fashioned windows, this means important savings in installation costs.

Here, for the first time, jalousies fit standard window openings. You get a complete package — including the jalousie, glass, screen and wooden frame — all contained in a special crushproof carton for safe delivery. The #1 White Pine frame has filler pieces on the inside. If the jalousie is used with dry-wall construction, simply pull the four filler strips off — if with plaster, leave them on.

Nova Jalousies dignify and beautify the low-cost house and are naturally "at home" in any residence. With Nova you get top quality. Jalousies generally are made to meet price competition—which necessarily causes some sacrifices in quality. Nova Jalousies, whether pre-framed or KD (knocked-down), are made as well as modern engineering techniques and materials can make them. They are priced slightly higher, but you have the satisfaction of getting the best and — in the long run — the most economical.

The new 68-page Nova Handbook gives the **know-how** on every type of jalousie. Details of construction are fully illustrated. There are instructions on how to figure sizes of individual windows, as well as on how to build complete porch enclosures — with the new levellers that automatically take care of out-of-level porch floors. The Handbook tells how to eliminate wood bulkheads and plumb up walls—and describes Nova Wood Jalousie Doors and the All-Aluminum combination screen and storm doors.

Send for your copy of the new Nova Handbook today. In this building manual you also get complete information on how to waterproof basements or treat brick and masonry surfaces — on Novafold Plastic Folding Doors — on Nova Shakes — and on the new 4' Novapanel, for quick application of cedar shakes. There is no cost or obligation. Kindly address your inquiry to Department **J-29.**

NOVA Co. SALES
TRENTON 3, N. J.

A wholly owned subsidiary of Homasote Company

notices

(Continued from page 219)

new offices, partnerships

SMITH, TARAPATA, MACMAHON, INC., Architects, 894 S. Adams Rd., Birmingham, Mich.

BURBANK, BLAGDEN, MUCHEMORE & BLAKE, Architects-Engineers, Creemer Rd., Armonk, N.Y., and 89 Lake Ave., Greenwich, Conn.

JOHN REA, Architect, is new partner in firm of HUNTER, CALDWELL & CAMPBELL, Architects, 3601 Fifth Ave., Altoona, Pa.

HARRY A. POLLACK, Architect, 159-07 46 Ave., Flushing 58, N. Y.

SHURCLIFF, SHURCLIFF & MERRILL, Landscape Architects-Town Planners, 14 Beacon St., Boston 8, Mass.

GROUT, WALKER & JACKSON, Engineers-Architects, 3209 Tampa Street, Tampa, Fla.

UNDERHILL & WAGNER, Architects, 4313 Leimert Blvd., Los Angeles 8, Calif.

SMITH & KENNEDY, Planning Consultants, 905 First National Bank Building, Tampa, Fla.

ROBERT F. HIGHTOWER, Architect, 929 Main St., Grand Junction, Colo.

acoustical consultants

BOLT BERANEK & NEWMAN, INC., Acoustical Consults of Cambridge, Mass., recently opened a new office at 435 S. La Cienega Blvd., Los Angeles, Calif. DR. WILLIAM GALLOWAY is handling engineering activities and JACK B. C. PURCELL the architectural acoustics problems.

appointment

RAYMOND H. WETHERBY has been appointed to new business department of H. E. BEYSTER & ASSOCIATES, INC., Architects-Engineers, Detroit, Mich.

(Continued on page 224)

OFFER YOUR CUSTOMERS the rich good looks of real wood paneling with inexpensive "relief grain" plywood. The surface is textured (brushed, striated or embossed) to create a striking third dimensional effect that adds warmth and charm to any setting. Ideal for feature walls, ceilings or built-ins. Goes up quickly. Strong, won't crack or split. Takes any finish—including dramatic tone-on-tone effects.

FREE PORTFOLIO OF FIR PLYWOOD INTERIORS
File folder assembly includes design ideas, specifications, application data. Write (USA only) Douglas Fir Plywood Assoc. Dept. PA, Tacoma 2, Washington.

DFPA TESTED QUALITY

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WSP

Plywood of other western softwoods available; look for this DFPA grademark.

A.I.A. FILE NO. 15-M-1

DESIGN STUDY
NUMBER
2

Davidson
TYPE 2 Porcelain Facing Panels

SECURITY TRUST AND SAVINGS BANK
Billings, Montana

Architect: Bank Building & Equipment Corporation, St. Louis, Missouri; Mechanical Engineering, R. L. Prussing

General Contractors: Lowe Construction Co., Billings, Montana

Davidson Type 2 Porcelain Panels: — Distributed and Erected by: The Porcel Co., St. Louis, Missouri

Good creative design, planning and construction are the results indicated in the completed structure shown above. Results of the "finished job" begin with materials that offer compatibility with others and yet maintain freedom of design as well as economy to over-all construction costs. Davidson Architectural Porcelain for the building shown above was Type 2 Facing Panels in a ripple powder blue finish, which were mounted on steel framing and set at an angle.

Whether the application is porcelain facing panels or curtain-wall panels for new or remodeling use, you can rely on Davidson Architectural Porcelain Panels to offer unlimited freedom of design expression.

DAVIDSON ENAMEL PRODUCTS, INC.
1119 EAST KIBBY STREET • LIMA, OHIO

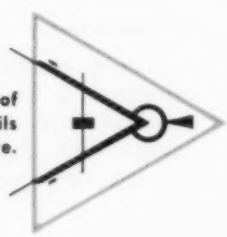
Member Producers' Council

Davidson

ARCHITECTURAL PORCELAIN

the modern building material . . .
engineered for Architects

See next page for study of porcelain construction details of the building shown above.



CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE

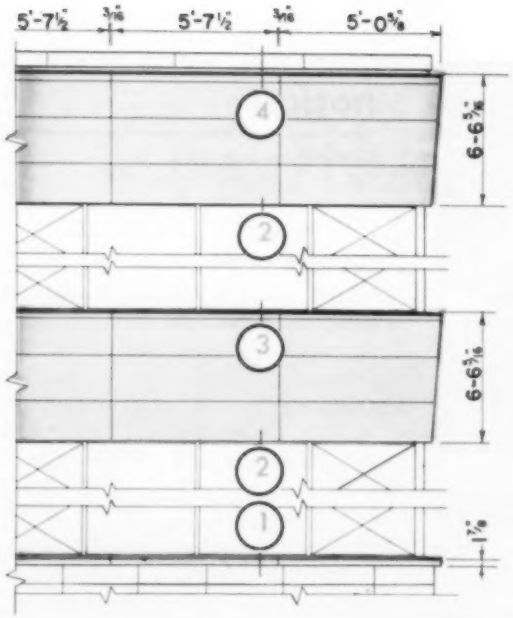
A.I.A. FILE NO. 15-M-1

CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE

A.I.A. FILE NO. 15-M-1

A.I.A. FILE NO. 15-M-1

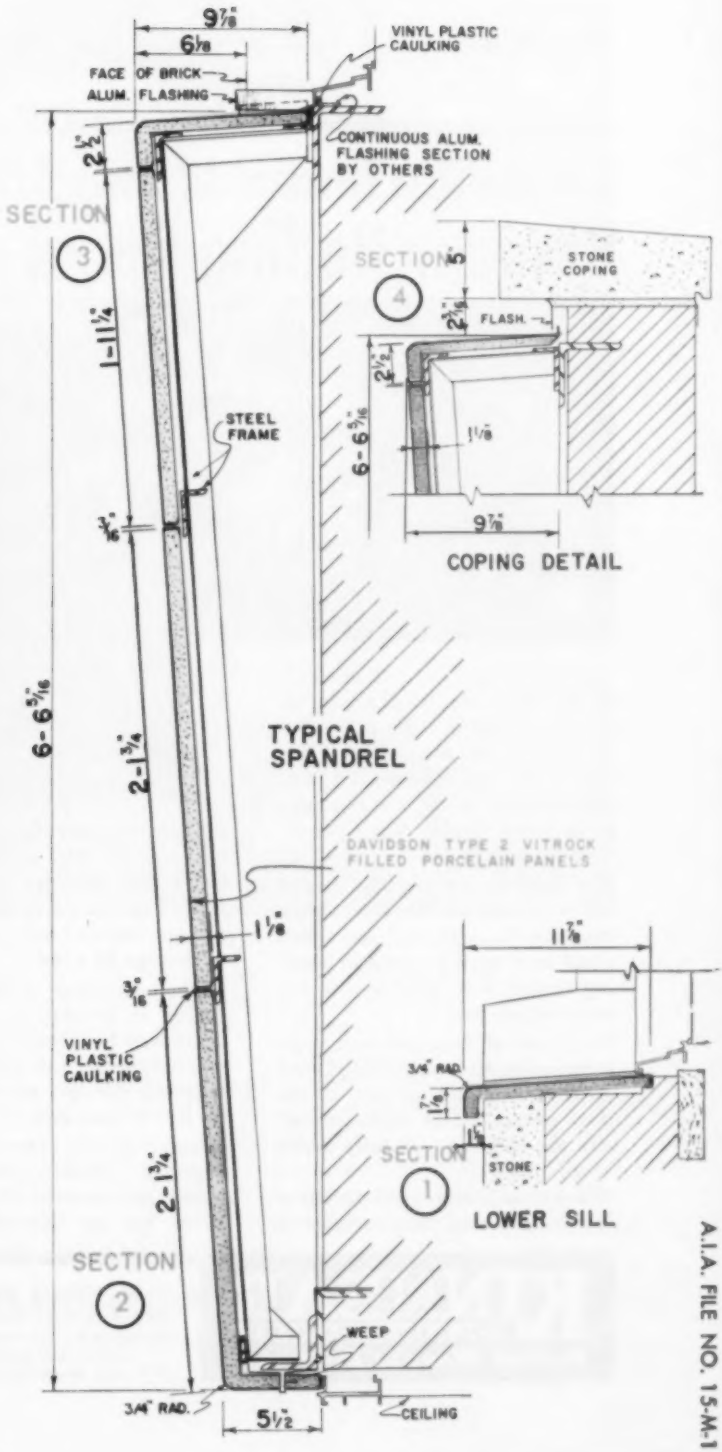
CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE



DESIGN STUDY NUMBER **2**

Davidson

TYPE 2 Porcelain Facing Panels



DESIGN STUDY 2

DAVIDSON ARCHITECTURAL PORCELAIN

DESIGN & DETAIL STUDY OF ARCHITECTURAL PORCELAIN

Security Trust and Savings Bank, Billings, Montana

For further information on the application of Davidson Architectural Porcelain check and send for the following:

- ☐ Full scale drawings showing the application of Architectural Porcelain for the Security Trust and Savings Bank, Billings, Montana.
- ☐ Detailed, 16-page Architectural Catalog, 1956 Edition
- ☐ Porcelain Panels for Store Fronts
- ☐ Porcelain Panels for Shopping Centers
- ☐ Porcelain Panels for Schools
- ☐ File of Typical Construction Details
- ☐ Reference File Jacket on Architectural Porcelain
- ☐ Reprints of this Study #2. Quantity_____

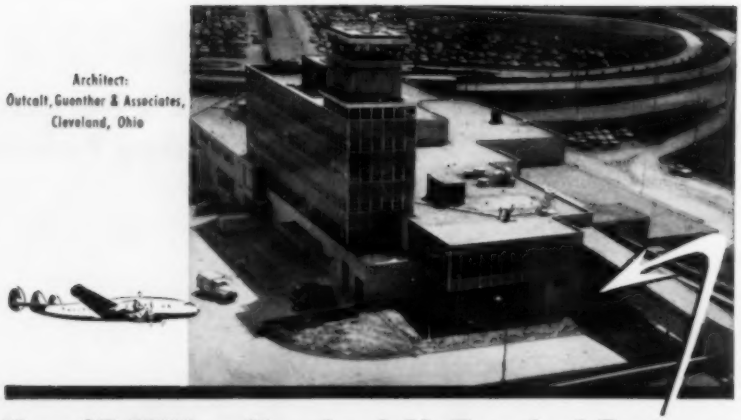
DAVIDSON ENAMEL PRODUCTS, INC.
1119 E. KIBBY STREET, LIMA, OHIO

A.I.A. FILE NO. 15-M-1

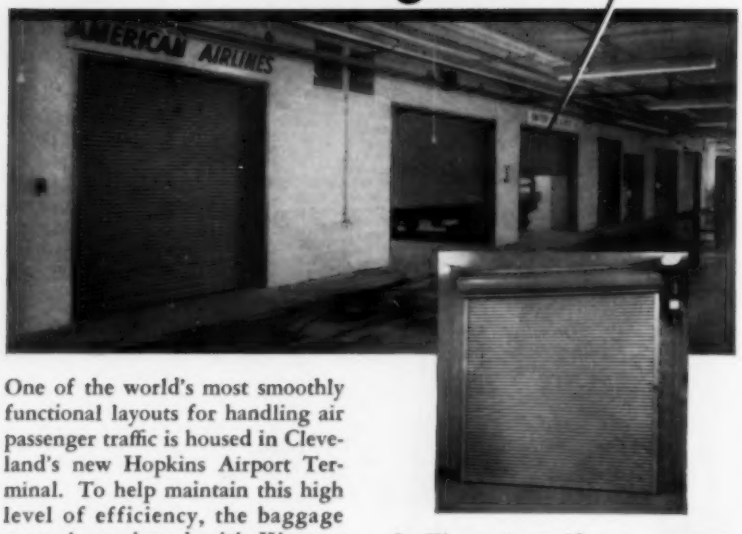
CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE

A.I.A. FILE NO. 15-M-1

Architect:
Outcalt, Guenther & Associates,
Cleveland, Ohio



New $5 Million Cleveland Air Terminal Features Kinnear Rolling Doors



One of the world's most smoothly functional layouts for handling air passenger traffic is housed in Cleveland's new Hopkins Airport Terminal. To help maintain this high level of efficiency, the baggage room is equipped with Kinnear Steel Rolling Doors.

The space-saving coiling upward action of Kinnear Doors has made them top choice through more than a half century of progress in building design, such as this new terminal represents.

Every foot of floor and wall space surrounding Kinnear Rolling Doors — *within an inch or two of the door curtain, either inside or outside the building* — is fully usable at all times.

When closed, the rugged curtain of interlocking steel slats *(originated by Kinnear)* provides extra protection against theft, intrusion, vandalism, storm, accidental damage, and fire. When raised, it clears the entire opening and *stays* out of reach of damage by wind or vehicles.

Highest resistance to rust and corrosion is assured by Kinnear's heavy-duty hot-process galvanizing, which applies a full 1.25 ounces of pure zinc per square foot of metal, by ASTM standards.

Kinnear Rolling Doors are built any size. Motor operation with push-button control also available. Write for the Kinnear catalog.

KINNEAR
ROLLING DOORS
Saving Ways in Doorways

The KINNEAR Mfg. Co.
1900-20 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

notices

(Continued from page 221)

appointments

VICTOR GRUEN & ASSOCIATES, Architects, has appointed KENDALL ELLINGWOOD to develop, direct, and coordinate its architectural activities thorughtout the country. Firm has offices in Los Angeles, San Francisco, Detroit, Minneapolis, and New York.

YALE UNIVERSITY recently announced following faculty appointments: LOUIS I. KAHN, Professor of Architecture; JOEL I. ABRAMS, Assistant Professor of Civil Engineering.

School of Architecture and Allied Arts, UNIVERSITY OF OREGON, announces the following appointments: NORMAN J. JOHNSTON, PHILIP H. DOLE, and ALBERT D. POE, Assistant Professors of Architecture; JULIO ACUNA, Instructor in Architecture.

KAWNEER COMPANY, Niles, Mich., announces appointment of WILLIAM S. KINNE, JR., former Professor of Architecture at UNIVERSITY OF ILLINOIS, as Director of Architecture-Planning on Company's executive staff.

THE BRUNSWICK-BALKE-COLLENDER COMPANY, Chicago, Ill., has appointed E. L. KIZZIAH, Rome, Ga., dealer and distributor of new line of classroom furniture manufactured by the Company.

new names

FENESTRA INCORPORATED is new name of former Detroit Steel Products Company, Detroit, Mich. Stockholders approved change in corporate title at annual meeting in March.

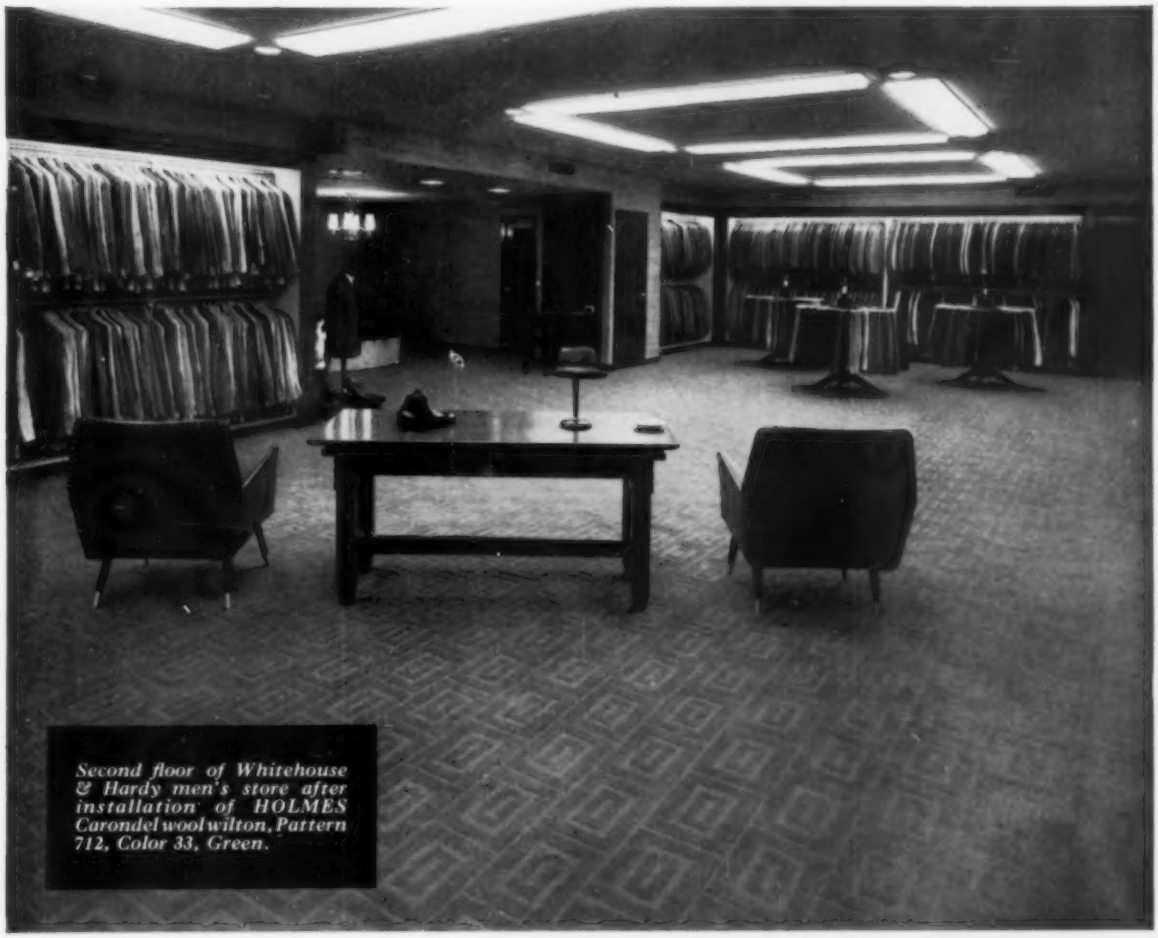
H. L. Judd Division of THE STANLEY WORKS, Wallingford, Conn., is now known as STANLEY-JUDD Division.

(Continued on page 228)

ARCHITECT SPECIFIES HOLMES CARPET

For that handsome look

IN NEW 5th AVENUE MEN'S STORE



Second floor of Whitehouse & Hardy men's store after installation of HOLMES Carondel wool wilton, Pattern 712, Color 33, Green.

HOLMES **Carondel** wool wilton carpet enabled architect, Sam Feingersch, to achieve that "handsome look" on the first and second floor showrooms of the new Whitehouse & Hardy 5th Avenue men's store.

Installed wall-to-wall, **Carondel** creates an outstanding decorative effect with its classic block pattern motif in soft green. The all-wool wilton construction of this high cut, low loop pile carpet also makes it a most practical choice.

HOLMES Contract Staff is ready to meet your requirements from its wide selection of stock contract qualities and patterns, or through its custom carpet service. Write for HOLMES CONTRACT HERALD and see other outstanding contract carpet installations.

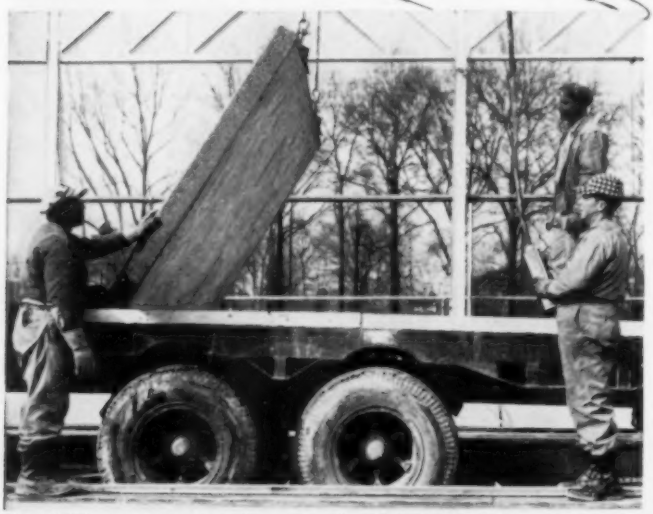
wilton carpets
HOLMES

Archibald HOLMES & SON

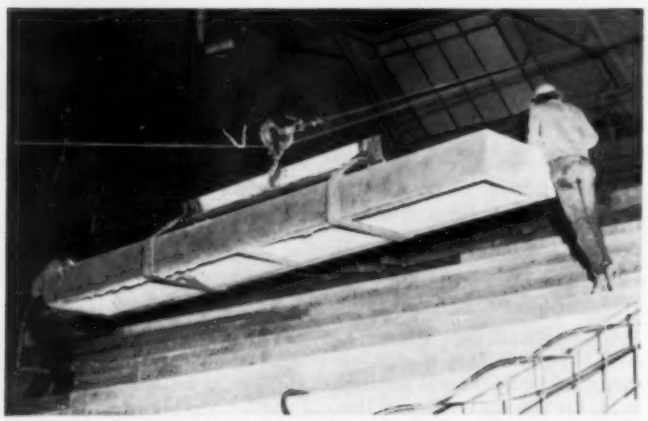
"Quality Carpets Since 1857"

Erie Avenue and K Street • Philadelphia 24, Pa.

Architect: A. G. ODELL & ASSOCIATES, Charlotte, N. C.
Consulting Engineers: SEVERUD-ELSTAD-KRUEGER, New York City
General Contractor: THOMPSON & STREET CO., Charlotte, N. C.
Contractor for Precast Panels and Seat Beams: CONCRETE MATERIALS, INC., Charlotte, N. C.
Ready Mix Concrete supplied by: CONCRETE SUPPLY CO., Charlotte, N. C.



One of 600 precast concrete wall panels made with Lehigh Early Strength Cement. Averaging 7½' x 20' in size, the panels form 60,000 square feet of the exterior walls in these structures.



Placing one of 1000 precast concrete seat beams in coliseum. These beams, each weighing 4000 lbs. were also made with Lehigh Early Strength Cement. Seating capacity of coliseum is 10,000.

trend toward **tomorrow...**

The David Ovens Auditorium and the Charlotte Coliseum, Charlotte, N. C. illustrate the trend toward concrete for tomorrow's construction. By combining precast and cast-in-place concrete the designers and contractors have provided structures that are durable, functional and pleasing to the eye.

Lehigh Cements were used throughout. In the manufacture of the 600 precast exterior wall panels and 1000 precast seat beams, Lehigh Early Strength Cement was used to cut labor, curing and overhead costs by 50%. Dependable Lehigh Portland Cement was used in the ready mix concrete for all cast-in-place concrete. Lehigh Mortar Cement was used to lay up all masonry units.

Whether the structures you design are big or small, traditional or modern, there are Lehigh Cements to meet your requirements. You can approve Lehigh Cements with the assurance that they surpass the most exacting Federal and ASTM specifications.

- LEHIGH EARLY STRENGTH CEMENT
- LEHIGH PORTLAND CEMENT
- LEHIGH AIR-ENTRAINING CEMENT
- LEHIGH MORTAR CEMENT

LEHIGH PORTLAND CEMENT COMPANY

ALLENTOWN, PA.

All flush doors may look alike . . . but these 9 reasons prove why America's *Finest* doors are Paine

REZO®

FLUSH DOORS

These nine production photographs show the time . . . craftsmanship, precision, care . . . and highly specialized equipment required for the manufacture of Paine Rezo Doors. Backed by over a century of woodworking experience and more than eight million installations, it's no wonder architects, dealers, builders — and home owners—call Rezo Doors America's finest doors!

For information, write:

PAINE

LUMBER COMPANY, LTD.

ESTABLISHED 1853 • OSHKOSH, WIS.

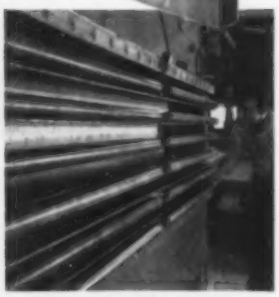
Rezo Doors equal or exceed the requirements of C.S. 200-55

1 All lumber kiln-dried to specific, and uniform moisture content.

2 Stiles and rails securely fitted. Stiles are 1 13/16" instead of 1⅛".

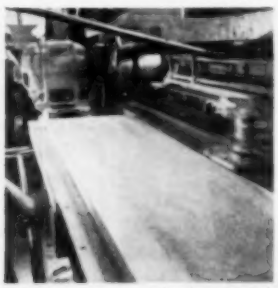
3 Hand-matched face veneers; the panels ⅛" thick—instead of 1/10".

4 A complete coating of resin glue is applied by machine.



5 Accurate assembly is assured by controlled heat and pressure.

6 Doors pass through a complete conditioning cycle in special kilns.

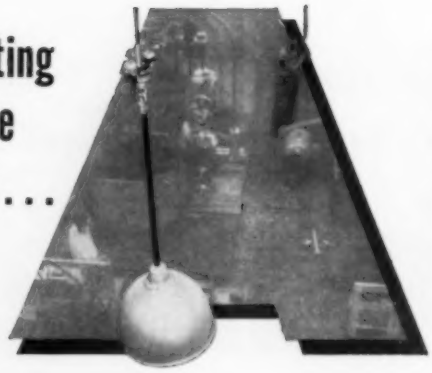


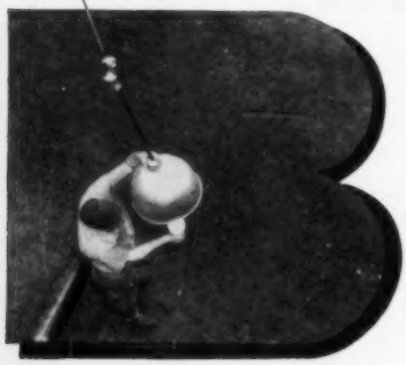
7 Doors are carefully belt-sanded to a cabinetmakers's finish.

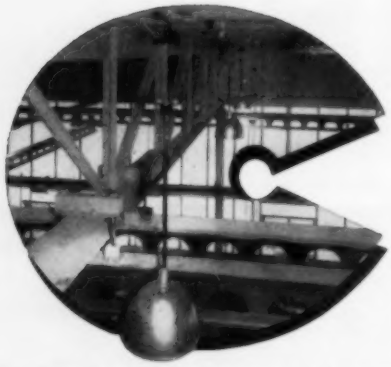
8 Special doors are custom-made by experienced craftsmen.

9 Each door must be painstakingly inspected in oblique light.

practical lighting
maintenance
is as easy as...







WITH THOMPSON HANGERS

BECAUSE... there is no safer, faster or more efficient means of servicing inaccessible high-bay luminaires. It is as simple as this:

A. Workman, *standing on the floor,* disconnects and lowers luminaire to convenient working height.

B. Fixture is cleaned and relamped *in minutes* ... without climbing or electrical hazards.

C. Luminaire is quickly returned to operating position. Accurate repositioning and positive latching of the two hanger members are assured by the mechanism's patented design.

Foolproof and easy-to-use, Thompson Hangers are solving luminaire maintenance problems ... at surprisingly low cost ... in buildings of all types.

For details, write for Bulletin TH-55.

T·E

THE THOMPSON ELECTRIC COMPANY
1202 POWER AVENUE • CLEVELAND 14, OHIO 7650-TE

notices

(Continued from page 224)

new offices

PORTLAND CEMENT ASSOCIATION announces opening of five new offices, one a new regional office in Los Angeles, Calif., to supervise activities of Los Angeles and Seattle, Wash., District Offices, and other District Offices in Baltimore, Md., Trenton, N.J., Portland, Me., and Louisville, Ky. Expansion will make available services of experienced engineers and experts in use of concrete on a more localized basis.

consolidation

HOOKER ELECTROCHEMICAL CO., Niagara Falls, N. Y., DUREZ PLASTICS DIVISION, and NIAGARA ALKALI recently completed consolidation of their district sales offices. Headquarters sales offices for chemicals will continue to be at Niagara Falls, and for plastics at North Tonawanda, N. Y.

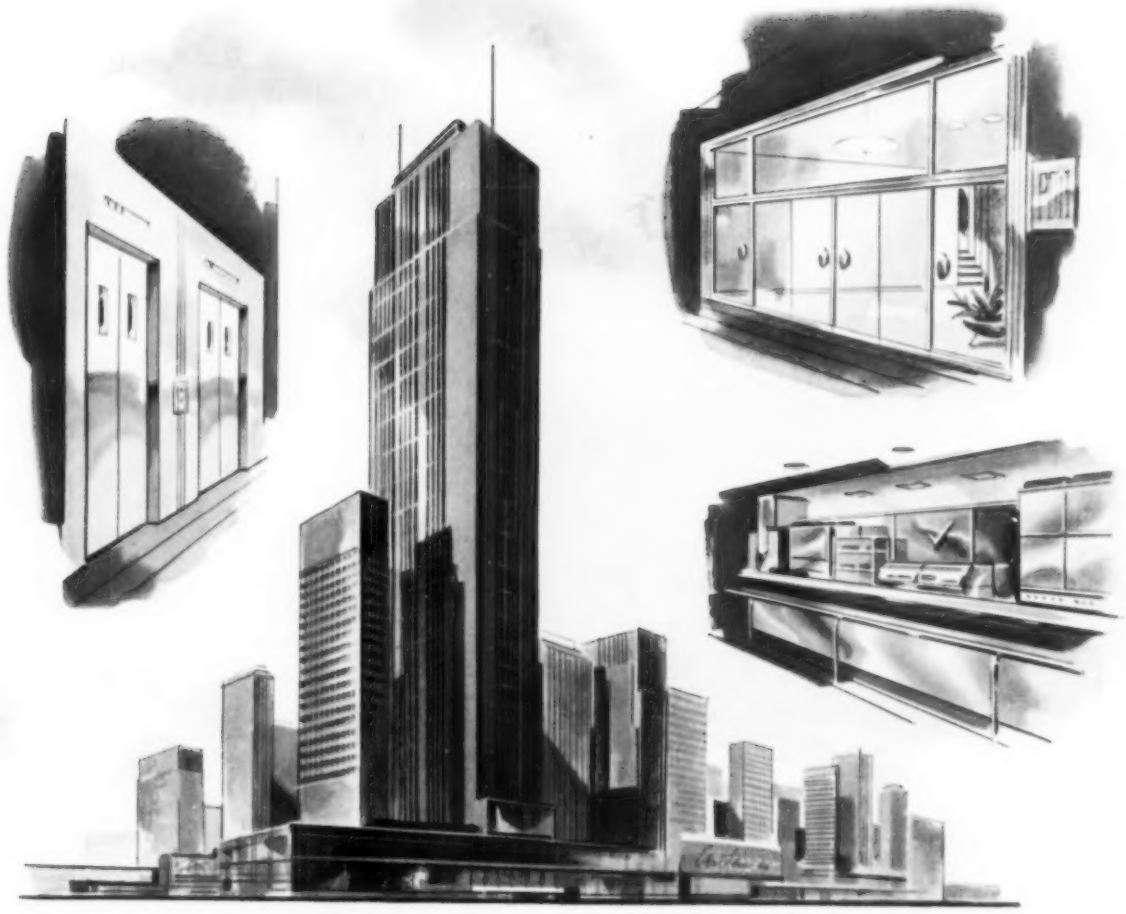
competition

CADILLAC PLASTIC AND CHEMICAL CO., Detroit, Mich., is sponsoring contest for design of best thermoplastic rod or tube application *now in production or in tooling;* $1000 first prize and three second prizes of $150 each in following categories: consumer product; industrial or technical product; architectural or decorative.

centralized sales set-up

RICHARD M. HAUSERMAN has been named a Vice-President of E. F. HAUSERMAN COMPANY, Cleveland, Ohio, and will head up new consolidated sales-marketing department. T. V. BALCH continues as Vice-President and Director of Contracts. HOWARD F. HAYDEN was appointed Sales Manager, THOMAS F. BUNDY, Manager of Branch Engineering, and WILLIAM J. LONGWORTH, Manager of Order Processing. HUGH F. BECKWITH will be Manager of new Market Development Department, with GERALD P. FENTON as Advertising Manager.

(Continued on page 232)



in buildings...
everybody benefits from **stainless steel**

the architect specifies long-lasting Stainless Steel for its strength, its beauty and its economy of maintenance. In heavy use areas and for weather-exposed panels and trim, nothing stands up or keeps its smooth finish like Stainless Steel.

the builder likes working with Stainless Steel. It is easy to install, does not dent, peel or discolor and presents no problem on matching or replacement.

the tenants enjoy living or working in buildings that are bright, clean and attractive because of Stainless Steel.

Mc Louth Stainless Steel

For the product you make today and the product you plan for tomorrow specify McLouth high quality sheet and strip Stainless Steel

McLouth Steel Corporation **DETROIT, MICHIGAN • MANUFACTURERS OF STAINLESS AND CARBON STEELS**

MATICO

selected for another important project...

Petersburg School
Pageland, S. C.

Architect: Lyles, Bissett, Carlisle and Wolfe

General Contractor: Harlee-Quatlebaum Construction Co.

Flooring Contractor: Hugh Prather

Completely functional South Carolina school sets pace in modern school design!

MATICORK, the floor tile that simulates all the beauty of natural cork in low-cost asphalt, has been selected for use throughout the modern, pace-setting Petersburg School in Pageland, South Carolina. All classrooms, corridors, and its vast gymnasium have MATICORK® tile. And for the cafeteria and home economics room, colorful grease-proof asphalt tile was specified. Floor beauty was not the only reason for choosing Matico tile flooring! It is economical . . . costs so little to install and maintain! It resists dirt and scuffs . . . lasts for years and years, even under the heaviest traffic. And it is fire-resistant—another important reason for use in schools. If you want all the facts about MATICORK, or any other Matico product, write to Dept. 9-9, Newburgh, N. Y.

MATICORK Asphalt Tile (CK 981 [light]) was selected for the gymnasium floor because it offers all the warm, rich beauty of natural cork with the dependable durability of asphalt.

Grease-proof MATICO Asphalt Tile (G. P. 424 and G. P. 102) in striking combinations of green and white lends a pleasant and practical air of homelike comfort to the school cafeteria.

MASTIC TILE CORPORATION OF AMERICA

Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

Rubber Tile • Vinyl Tile • Asphalt Tile • Confetti
Aristoflex • Parquetry • Maticork • Cork Tile • Plastic Wall Tile

QUALITY CONTROLLED MATICO PRODUCTS

Guaranteed by Good Housekeeping

New Shopping Center Features Low Cost Construction with J&L Junior Beams

"Our cost estimates comparing various structural systems showed that 40 foot J&L Junior Beams used across two 20 foot spans proved to be the most economical type of construction." That's how Mr. Hymen Rosenberg, AIA, summed up the reason he specified 55 tons of 10 inch Junior Beam roof purlins in the ultra-modern Pines Shopping Plaza at Perrysville, Pa.

Produced exclusively by J&L, Junior Beams are the lightest hot rolled structural section available. Builders find they help reduce construction costs. First, by reducing the steel tonnage required, and second, by cutting the labor cost because Junior Beams can be easily fabricated, speedily raised and positioned with minimum manpower and material handling equipment.

Junior Beams are rolled from copper-bearing steel that is four times as resistant to corrosion as non-copper bearing carbon steel, assuring longer life in the finished structure.

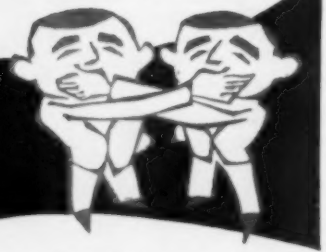
Get complete data on these versatile J&L structurals. Write for more information showing how Junior Beams are being used in all types of light occupancy structures as well as shipbuilding, grandstands, truck and trailer frames.

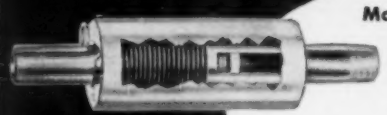
Jones & Laughlin
STEEL CORPORATION · PITTSBURGH

Architect: Hymen Rosenberg
General Contractor: Sam Verman
Steel Fabricator: Levinson Steel Company

FLEXON
EXPANSION COMPENSATORS

"SILENT PARTNERS" in Heating System Expansion Control





Model H, High Pressure Type— for pressures to 150 psig, temperatures to 750°F. Handles total motion to 1¾" (1½" compression, ¼" extension). Available with all commonly used fittings. Pipe sizes: ¾" through 3".

Model L, Low Pressure Type— for pressures to 40 psig, temperatures to 250°F. Handles total motion to ⅝" (½" compression, ⅛" extension). Available with all commonly used fittings. Sizes: ¾" through 2".

Specify these two "silent partners" for your steam and hot water heating systems and the whole operation becomes very "hush-hush". The objectionable noise of pipe creeping caused by uncontrolled expansion is eliminated and you are assured of maintenance-free leakproof service—for the life of the piping system.

Especially designed and engineered for the modern trend to narrow wall construction, they replace less effective or obsolete methods of expansion compensation such as slip joints, swing joints, and pipe loops and bends.

Flexonics Corporation manufactures a low pressure compensator for horizontal lines—a high pressure type for both risers and horizontal runs.

The quality of design and construction of Flexon Expansion Compensators has been proven by years of actual operating experience and exhaustive laboratory tests. You can specify "FLEXON" for your piping systems knowing they do much more than "keep it quiet."

For detailed information, write for Bulletin 151.

EC-23

FLEXON® QUALITY proved in service and backed by over 54 years manufacturing experience

Flexonics *Corporation*
EXPANSION JOINT DIVISION
1306 S. THIRD AVENUE, MAYWOOD, ILLINOIS
FORMERLY CHICAGO METAL HOSE CORPORATION

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

notices

(Continued from page 228)

lock sales and service

YALE & TOWNE MANUFACTURING COMPANY announce opening of a lock and hardware sales and service center at 1130 Garfield Ave., Oak Park, Chicago, Ill.

fabrics and furniture

BORIS KROLL FABRICS, INC., and JENS RISOM DESIGN, INC., announce opening of new Kroll-Risom Showroom at the Decorative Center, Dallas, Tex.

affiliation

CALIFORNIA REDWOOD ASSOCIATION, San Francisco, Calif., recently became the sixteenth member association of the NATIONAL LUMBER MANUFACTURERS ASSOCIATION, a federation of regional, species, and product associations.

p/a congratulates . . .

WILLIAM W. BURNHAM, now Assistant Sales Manager, Philadelphia sales territory, UNIVERSAL ATLAS CEMENT COMPANY, New York, N.Y.

JOHN E. SHREVE, appointed Vice-President in Charge of Sales, J. A. ZURN MFG. DIVISION of recently formed ZURN INDUSTRIES, INC., New York, N.Y.

WALTER SLINGER and BENJAMIN F. DOTY, newly appointed Welding Engineers at New York Branch, CRUCIBLE STEEL COMPANY OF AMERICA, Harrison, N.J.

TOD AGRELIUS, new Sales Manager, Grand Rapids, Mich., area, WEBER-WALL DIVISION of WEBER SHOWCASE & FIXTURE CO., INC., Los Angeles, Calif.

M. EVERETT BARNARD, newly appointed Manager of Unit Heater Department, CARRIER CORPORATION, Syracuse, N.Y.

JOHN R. MILLER, named Manager of Appliance Sales, YOUNGSTOWN KITCHENS DIVISION of AMERICAN-STANDARD, Warren, Ohio.

(Continued on page 234)

Whether your commercial and industrial designs are...

ultra modern

traditional

or contemporary

you need **Burkay®**

for all your Hot Water Needs

When you specify *Burkay*, you are not tampering with quality . . . you are buying the outstanding commercial water heater on the market. One you can take pride in specifying.

Pace-setting engineering design, long experience in gas appliance work, careful material selection, capable workmanship, high-level quality control—the result is an efficient water heater that you can depend on.

Burkay water heaters have found wide use and substantial acceptance in all types of commercial and industrial applications. They have a proven record of fine performance. Require minimum maintenance.

It will pay you to investigate *Burkay* water heaters for your building designs. Call your nearest A. O. Smith distributor.

Through research A.O.Smith *. . . a better way*

A.O.Smith
CORPORATION
PERMAGLAS DIVISION • KANKAKEE, ILLINOIS

OUTSTANDING FEATURES—Efficient generation of the right temperature hot water. Instant response to hot water demands. High outputs. High recoveries. Rust-free water. Corrosion-free, sturdy construction. Minimum maintenance. Reliable. Safe. A.G.A. approved. ASME approved.

BROAD LINE—Burkay "all-copper" heaters for large volume jobs. Durasteel "pre-lined" self-contained storage heaters for heavy duty use where water conditions and type of service permit. Special "glass-lined" units for moderate volume requirements.

WIDE RANGE OF OUTPUTS AND RECOVERIES—50,000 to 470,000 BTU per hr. 42 to 403 gal. per hr. per 100° rise.

MANY HOT WATER SYSTEMS—For all types of water heater applications—instantaneous, booster, recovery, or the Patented A. O. Smith Booster-Recovery or Short Temp. Booster-Recovery Systems for providing the sanitary rinse and the general-purpose hot water for restaurants. No line of commercial water heaters has such wide application.

SERVICE TO ARCHITECTS—Complete sizing data, installation drawings, sample specifications and other data available to you for ease in specifying the correct water heater for your job requirements.

SEE the 1956 Issue of Sweets' Catalog or write for detailed data on any specific application.

Yes...

This Fine Warwick High School Has the Most Sanitary Wash Fixtures

Boys and girls like Bradleys, too, as installed in Warwick Veterans Memorial High School, Warwick, R.I.

Architects: MacConnell & Walker, Apponaug, R.I.

General Contractor: E. Turgeon Construction Co., Inc., Providence, R.I.

Plumbing & Heating Contractor: Joseph P. Cuddigan, East Providence, R.I.

NO FAUCETS TO TOUCH... BOWL IS SELF-FLUSHING. RUNNING SPRAY OF TEMPERED WATER... AT THE TOUCH OF THE FOOT.

Whether two, three or five wash, Bradley Washfountains (Wall Type) serve clean running water at the touch of the foot. No faucets to touch, no chance of spreading infections. Bowl does not collect used dirty water, janitor work is reduced—the maximum in sanitation provided.

Bradleys are made in the semi-circular wall type 36-in. and 54-in. diameters and in full circle models. The larger models accommodate 8 to 10 students simultaneously. For specifications write for complete Catalog 5601...BRADLEY WASHFOUNTAIN CO., 2277 W. Michigan St., Milwaukee 1, Wis.

BRADLEY washfountains

Distributed through Plumbing Wholesalers

Write for Catalog 5601

notices

(Continued from page 232)

p/a congratulates . . .

HERMAN F. LEHMAN and C. H. MENGE, appointed Head and General Sales Manager, respectively, of FRIGIDAIRE Division, GENERAL MOTORS CORPORATION, Dayton, Ohio.

MARSHALL N. WATERMAN, elected President, ILLUMINATING ENGINEERING SOCIETY, for one-year term, effective October, 1956.

FRANK E. FARNAN, recently appointed Assistant to Vice-President and Acting Chief Executive, A. M. BYERS COMPANY, Pittsburgh, Pa.

PAUL R. RUTHERFORD, new President, CLAY SEWER PIPE ASSOCIATION, INC., Columbus, Ohio.

H. H. KIECKHEFER, appointed Sales Manager, WHEELCO INSTRUMENTS Division, BARBER-COLMAN COMPANY, Rockford, Ill.

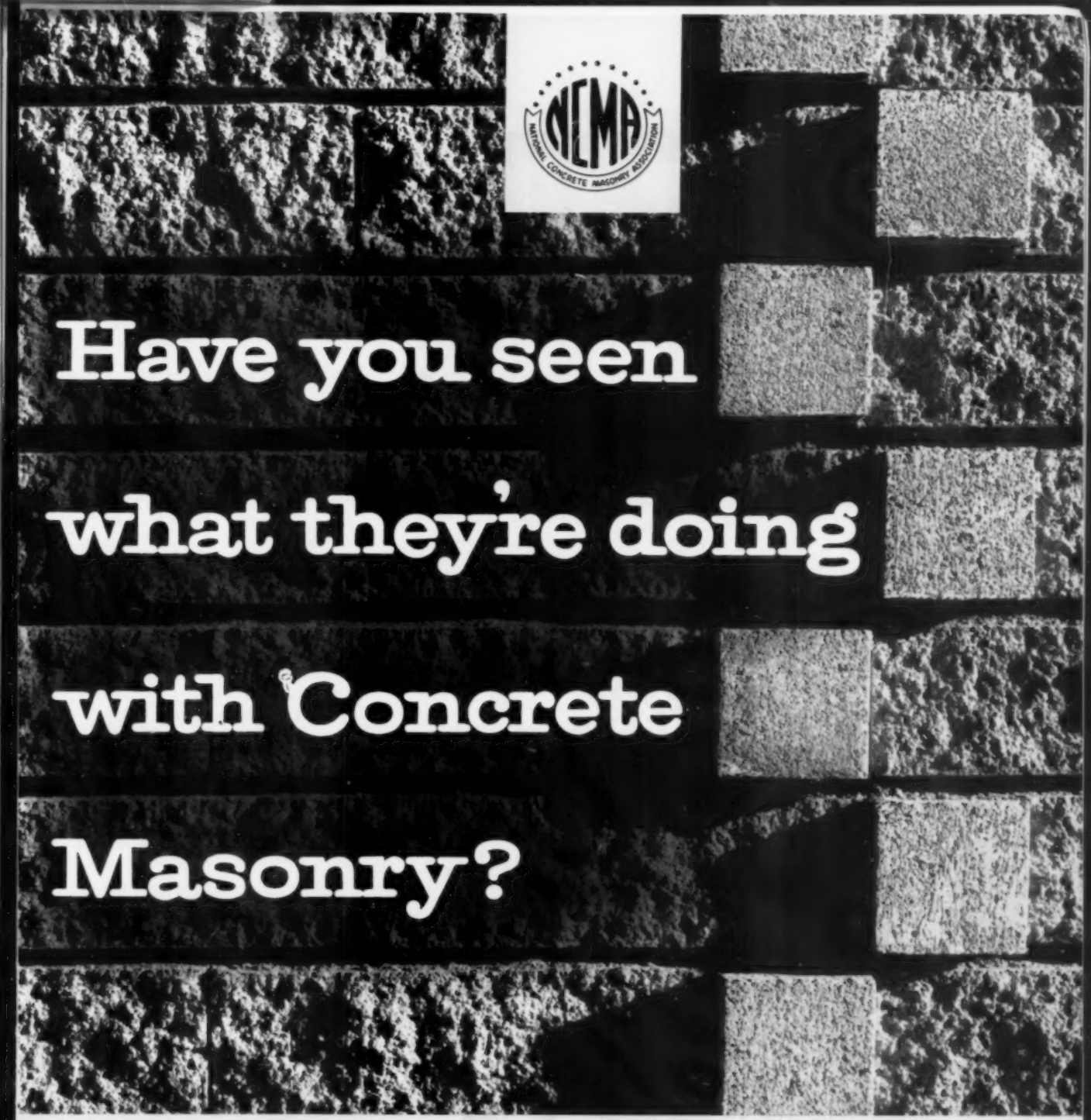
CLARK C. WILLIAMS, now Architects' Promotion Representative, Los Angeles area, for ARCADIA METAL PRODUCTS, Fullerton, Calif.

WILLIAM D. GRAHAM, JR., newly transferred to home offices, THE TRANE COMPANY, La Crosse, Wis., to specialize in sales office operation and procedure, and E. A. STROUPE, JR., who succeeds him as Manager, TRANE sales office, Greensboro, N.C.

ALLEN C. MENKE, recently elected Vice-President, Air Conditioning and Heating Sales, THE TRANE COMPANY, La Crosse, Wis.

LAWRENCE C. PAPP and EDWARD SHOLANDER, newly appointed Sales Engineers, Los Angeles Office, PRESCOLITE MANUFACTURING CORP., Berkeley, Calif.

JAMISON COLD STORAGE CO. and Pres. J. V. Jamison, III, on the 50th anniversary of the Hagerstown, Md., concern, which has published an illustrated brochure to commemorate this Golden Anniversary.



Have you seen what they're doing with Concrete Masonry?

NEW COLORS

Block is now available in many localities in green, ocher, red, ivory, blue, yellow, gray, black and other decorator colors.

NEW PATTERNS

You can build extra distinction into a wall at little extra cost with any of the new concrete block wall patterns.

NEW RESEARCH

NCMA'S engineering staff has produced technical studies which can help you. Ask your local block plant for a copy of "Sound Reduction Properties of Concrete Masonry Walls."

THERE'S always something new about concrete block—the nation's most versatile building material. In fact there are so many new things going on in the industry that it's pretty hard for a very busy man like an architect or an engineer to keep up with the newest improvements.

Here's where your local NCMA member can be a big help to you. Ask him to show you some of the new improvements in block—he's a good man to know.

NATIONAL CONCRETE MASONRY ASSOCIATION • 38 SOUTH DEARBORN • CHICAGO

Terrazzo

for beauty and permanence

Long recognized as one of the most durable floorings available, Terrazzo renders a bonus in the form of dignity and beauty.

Aesthetically successful in interpreting the exact requirements of the most exacting architect, Terrazzo is adaptable to any plan, any design, any color combination. For beauty as long-lasting as that of the structure it graces, Terrazzo is unequalled.

Specify low-annual-cost Terrazzo — and build for beauty and performance. Free AIA Kit upon request.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

Sheraton Building, 711 14th St., N. W., Washington 5, D. C.

Send free AIA Terrazzo Kit to

Name .....

Firm .....

Street Address .....

City ..... Zone ..... State .....

p/a views

(Continued from page 14)

the basic sciences in order that developing applied techniques may be better understood.

The free clinical service where offered by students and faculty has on occasion not proved worthy of the effort. Furthermore, in contrast with former days, much "office practice" atmosphere is already evident in schools where all members of the faculty have practices.

Many courses are now better integrated than the author suggests, even to the extent where drafting as a separate subject does not exist in many curriculums. The teaching of drafting and perspective at our school already is related to the teaching of design.

I expect that future education will produce advanced intellectual and social disciplines which will prepare the student for greater city planning activity and greater participation with newer scientific developments such as atomic power. The architect in a progressively more materialistic society must assert values in terms of art as it is related to the humanistic.

The emphasis on the mechanics of architecture and structure is disturbing to me. These should not replace the proper esthetic. The strongest plea I would make is in the need for architecture to remain an art as it embraces the development of new techniques, new structural systems, and new needs, which, in turn, must be used to further this art. A freer, bolder approach to design principles will result.

OLINDO GROSSI
Pratt Institute

•

Dear Editor: I enjoyed reading Ernest Wright's article and I think it is most timely. I agree with Wright that we should break away from the old methods of teaching many of the architectural subjects. Some of our schools are already making a good start toward changing their

(Continued on page 240)

HEAVIEST, STRONGEST ALUMINUM WINDOWS BY

CUPPLES

HARRISON S. MARTLAND MEDICAL CENTER
(Newark City Hospital), Newark, New Jersey
Ziegler, Childs & Paulsen,
Architects, Jersey City
Walter Kidde Constructors, Incorporated,
Contractor, New York City

ACCENT THE SOUND CONSTRUCTION OF THIS HOSPITAL

This 17-story, $13 million modern fireproof structure embodies the newest medical techniques and hospital planning. Enduring quality is the keynote of its construction.

That is why the finest Cupples aluminum windows were specified. There are 1,406 Series 500 double-hung and 53 specially designed Series 900 projected windows in the building. Both of these types are superior in every detail—stronger, heavier, tighter. And they require no maintenance.

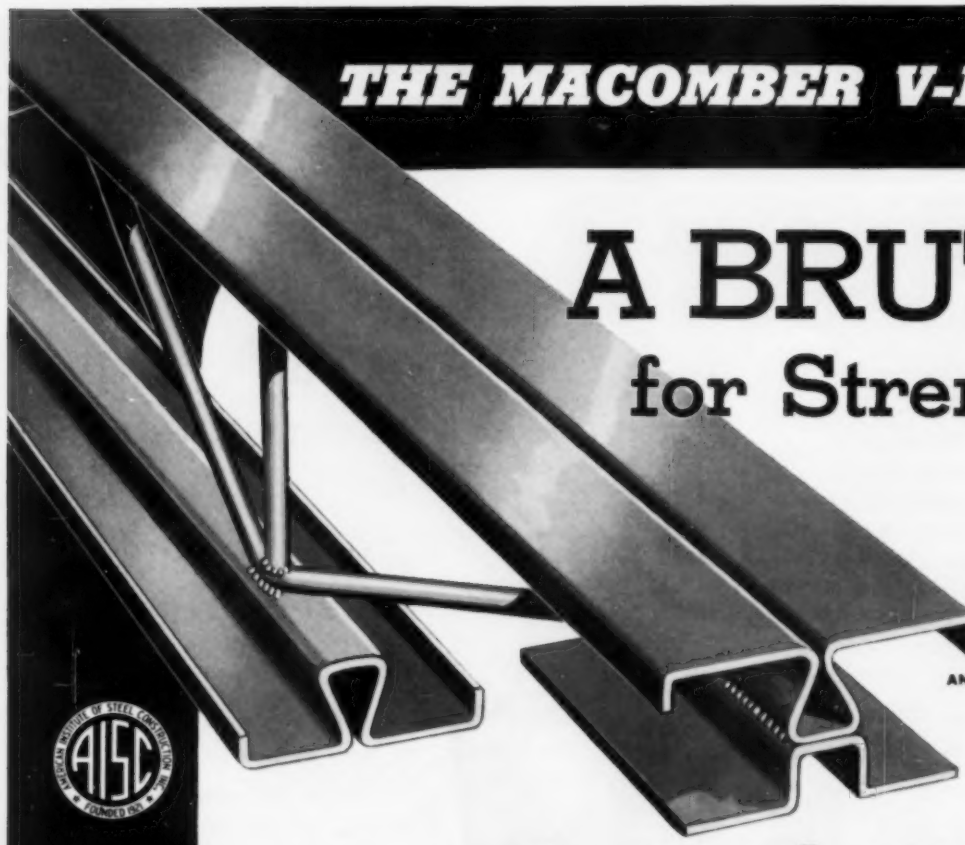
Sash in the double-hung Cupples windows is designed to receive various thicknesses of glass. Cupples aluminum interior sliding screens fully cover the windows. Cleaning anchors, hospital type sills and 3,850 feet of aluminum stools are also by Cupples.

Cupples is a foremost designer and manufacturer of many types of commercial and residential aluminum windows, curtain walls, doors, Alumi-Coustic grid systems for suspended ceilings and special ornamental products. Our catalogs are filed in Sweet's.

Cupples PRODUCTS CORPORATION
2660 South Hanley Road • St. Louis 17, Missouri

THE MACOMBER V-BEAM

A BRUTE for Strength



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U. S. Patent Nos.
2,184,113
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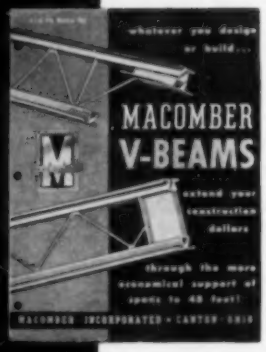
AND PATENTS PENDING

a structural product that delivers more for the money



Send for your V-BEAM Catalog

IT IS SIGNIFICANT that the Designing-Building team of America finds ONE USE of Macomber V-BEAMS such convincing proof of unparalleled strength and economy.

You can verify the truth of this statement by checking your next floor and roof framing requirements within the 48 foot span range of V-BEAMS with your nearest Macomber Representative.

STANDARDIZED STEEL BUILDING PRODUCTS

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• ENGINEERING • FABRICATING AND ERECTING •

NAILABLE STEEL JOISTS
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LONGSPANS
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BOWSTRING ROOF TRUSSES
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METAL DECK
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V-LOK STEEL FRAMING
•
STRUCTURALS

Give your clients

greater freedom

in room arrangement

Otto Haisley School,
Ann Arbor, Michigan

Louis C. Kingscott and
Associates, Inc.
Architects and Engineers
Kalamazoo, Michigan

Shirrer Construction
Company
General Contractors
Pontiac, Michigan

William Bortolotti
and Sons
Mason Contractors
Detroit, Michigan

The combination of light-directing glass block and vision strip keeps brightness at comfortable levels, provides vision and ventilation.

Acting as a daylighting team the Toplite Panels and glass block provide sufficient daylight during normal days without need for artificial lighting.

Toplite Roof Panels supplement light from sidewalls in deep rooms or completely daylight windowless rooms

Now, near the windows, and far from them, good daylight can be everywhere. No longer is it necessary to confine close detail work to the area nearest the windows. Toplite Roof Panels permit daylighting of all building areas regardless of location or distance from exterior walls.

The prismatic glass units in O-I Toplite Panels "think" before they transmit the sun's rays. Needed North light and the soft low rays from the South are readily accepted. But rays from the high summer sun are rejected. Glare and heat of old-fashioned skylights are eliminated.

The complete story of this great new advance in efficient utilization of free daylight is available in a new booklet on Toplite Roof Panels. For your free copy, write today: Kimble Glass Company, subsidiary of Owens-Illinois, Dept. PA-9, Toledo 1, Ohio.

GLASS BLOCK AND TOPLITE ROOF PANELS
TWO (I) PRODUCTS

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

27% bigger . . . Twice as useful

THE NEW 5TH EDITION OF

ARCHITECTURAL GRAPHIC STANDARDS

By CHARLES G. RAMSEY, A.I.A.; and HAROLD R. SLEEPER, F.A.I.A.

286 completely new plates . . .
236 pages revised

As essential to the architect as his T-square and drawing board! In drafting rooms throughout most of the world, wherever there are architects and builders, the words: "Look it up in Graphic Standards," testify to this book's practical staying-power!

Authentic and reliable, indispensable as ever, the new 5th edition is even bigger and better, with many new and striking features. Here are just a few:

- **75% of all the pages are either new or revised.**
- **8 major classes of items have been added. These include: design of plank and beam framing; curtain walls; pneumatic tubes; elevators and escalators; design of special fireplaces; comparative costs of roof covering; furniture and equipment; and tile and its correct usage.**
- **There is a new arrangement of topics for quicker reference. The book is in 23 sections, each with its own table of contents.**
- **The index is larger, with a new and more practical format.**
- **All new pages have been set by vari-type composition (instead of hand-lettering) for easier, faster reading.**
- **There is added text to complement the drawings.**

GRAPHIC STANDARDS is so thorough, so comprehensive, so basic that it has earned, in the words of *Progressive Architecture*, "A special place for itself in the fields of architecture and building." Order your on-approval copy today. Check the new AGS personally on a *trial* basis.

1956 **758 pages of plates** **$18.50**

JOHN WILEY & SONS, Inc. **PA-96**
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Please send me **ARCHITECTURAL GRAPHIC STANDARDS** to examine ON APPROVAL. In 10 days I will return the book and owe nothing, or I will remit the full purchase price plus postage.

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☐ SAVE POSTAGE! Check here if you ENCLOSE payment, in which case we pay postage. Same return privilege, of course.

p/a views

(Continued from page 236)

methods of teaching along the very lines suggested by Wright, but we still have a long way to go. I am confident, however, that we have made rapid strides during the last few years, and that more will be accomplished during the next few toward a more desirable and satisfactory integration of our courses, as well as increased emphasis on three-dimensional work by our students.

H. C. CHEEVER
Montana State College

•

Dear Editor: There is no doubt in my mind that what Ernest Wright has written is true. Much of what he predicts has already become true.

Three dimensional work in our school is becoming increasingly important. Models of design problems and models in structural design are required of students from their freshman year through the fifth year.

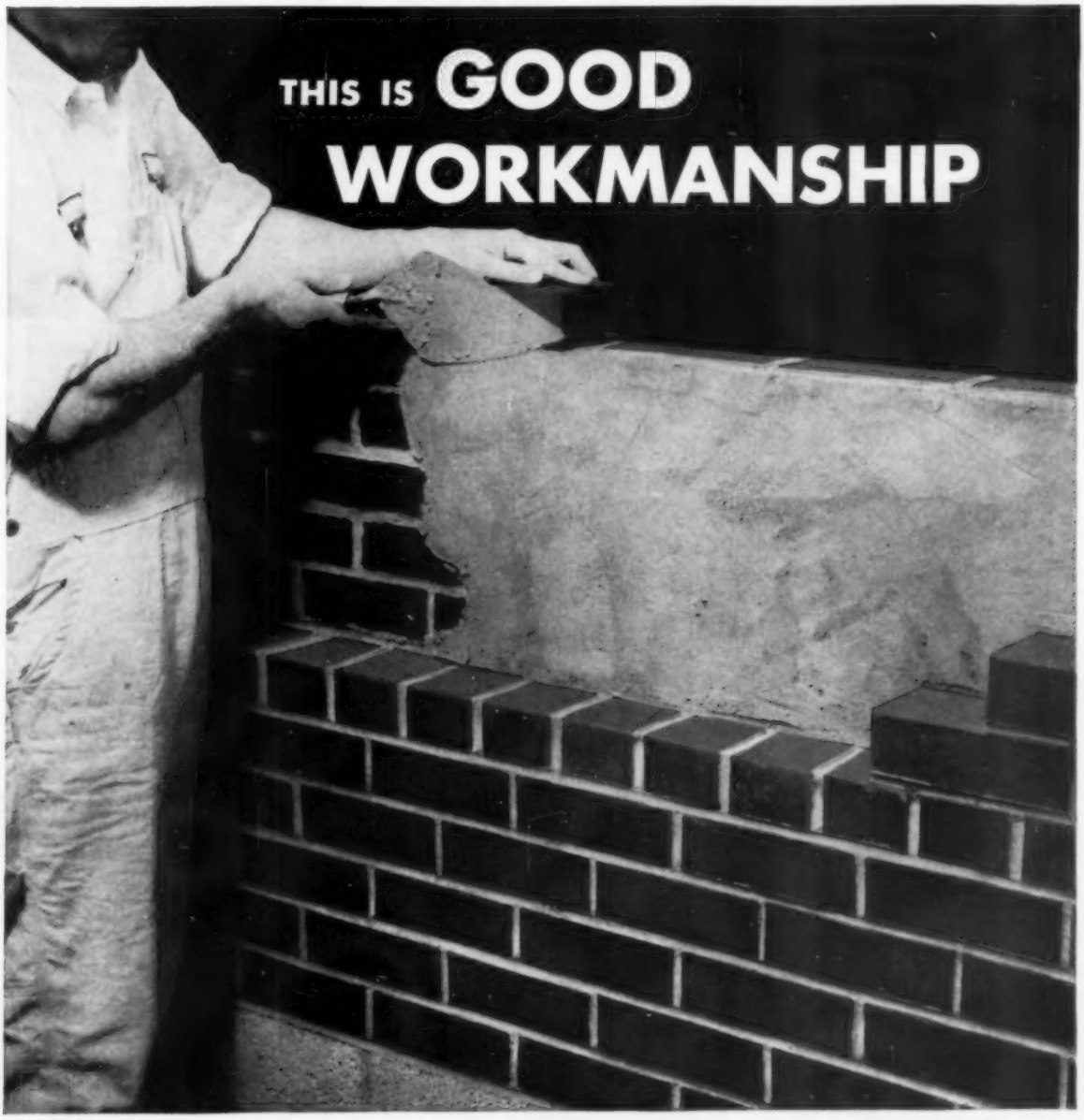
RICHARD W. LILLIOTT, JR.
University of Houston

•

Dear Editor: I enjoyed reading Ernest Wright's article. It is very interesting, especially since we have been teaching practice with theory here at the University of Cincinnati since 1906. This co-operative system of education has been the basis of our architectural curriculum since 1922. Instead of merely having summer work projects, our architectural students are placed on construction jobs, or in engineering or architectural offices over a five-year sequential and planned period of combining classroom theory with actual practice in building and architecture.

After thirty years of experience with this type of education, our students are placed on jobs and in offices all over the Eastern half of the United States and a demand for our co-operative students is much greater than the supply. You can

(Continued on page 244)



GOOD workmanship is one of the most important factors in preventing leaky brick walls.

Good workmanship includes wetting the brick—completely filling the head and bed joints—and back-plastering the face brick before the back-up units are laid.

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Before and after views of basement of Stauffer Chemical Company, San Francisco, California, showing modern lighting and the impression of extended space provided by Acousti-Celotex Acousti-Lux Translucent Panel installation. An effective method of converting "fringe-use" areas into attractive space. Architect: Kitchen & Hunt.

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p/a views

(Continued from page 240)

thus see that I am in complete accord with the philosophy presented by Wright in the first part of his article. This leads to the one comment which is pertinent with reference to integrating courses into the curriculum. If the students and faculty acquire a habit of co-ordinating practice with theory the integration of design with other school subjects comes as a natural step in educational thinking. The article is therefore very interesting and pertinent.

ERNEST PICKERING
University of Cincinnati

•

Dear Editor: I like very much all of Ernest Wright's specific suggestions; his examples of good teaching show a keen appreciation of the psychology of learning.

He does make one generalization that pains me. He suggests that everything in the curriculum that is not design is merely auxiliary; the integration of all of these other studies with design he predicts as an ideally laxative development of the future.

It seems to me that this would be a return to the methods of apprenticeship and repudiation of the meaning of a university. In a university many fields of knowledge and modes of thinking are represented. The student who wants to work in a particular area exposes himself to the faculty in that area and to the individual teacher's enthusiasm for and involvement in his subject. The teaching can be good even if the teacher is not an architect, not a designer, and not very much concerned with how his subject will help the student to become a designer. Design is important, but it is not the whole of education.

LAWRENCE B. ANDERSON
Massachusetts Institute of Technology

(Continued on page 248)

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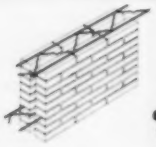

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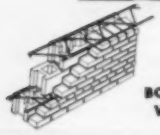

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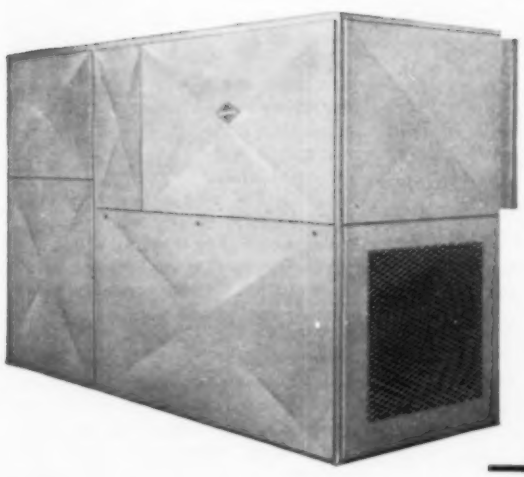

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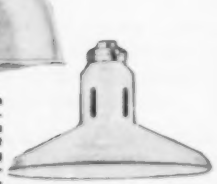

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p/a views

(Continued from page 244)

Dear Editor: Congratulations to PROGRESSIVE ARCHITECTURE and Ernest Wright. I don't know how anyone could dispute a single one of Wright's projections, and it is something of a tragedy that this must be a "Prediction" instead of a commonplace actuality. Wright's ideas for student field work and integration of courses into the design curriculum are particularly deserving of recognition.

RUSSELL C. CECIL
New York, N. Y.

•

Dear Editor: It is only now that I have found an opportunity to reread Ernest Wright's article on architectural education.

To my mind the author has made an extremely able and enlightened prognosis on how architecture should be taught and will be taught in the future. Deficiencies in present-day procedure have been observed and a constructive program of correction proposed. He has presented his case so convincingly that my first reaction was one of almost complete acceptance. However, some reservation on certain points comes with second thought.

What I may have to say is not in opposition to Wright's main thesis, but only a plea against the adoption of extremes. Take for example the suggestion that students should build a house as a part of the course requirement; or that the "Architectural school should have a small office where limited architectural service would be provided by students and faculty members working." This all very fine, but here we run up against considerations of choice within limited time means, a point which Wright has himself recognized in another connection. Within a space of five years what can be encompassed? Perhaps sawing boards, driving nails, learning

(Continued on page 250)

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p/a views

(Continued from page 248)

the carpenter's trade is to some extent a waste of time.

I think back over my own experience when in high school. As a part of the school program I made a bookcase complete with sliding glass doors. I still have it; it still serves its purpose; and I am glad that I made it. If, however, I had to choose between this exercise or the study of descriptive geometry, I would choose "descrip," as a more valuable subject in relation to the practice of architecture.

At Georgia Tech, the school I have been associated with for over thirty years, many changes have taken place, and I am sure changes will continue. At present all freshmen have to spend two hours twice a week in the Industrial Design shop. This is primarily to learn the use of tools and machines, but also provides the chance to get acquainted with the feel of materials. Later all students are required to make ¾″ scale construction models of a house or small building designed in the previous design course. In the structural course series there is some model building of various structural forms. In addition all students are required to have had at least three months of practical experience which may be on the job.

I do not say that the above is enough time alloted to actual three-dimensional work, but I have an idea that perceptive advance can be attained more quickly in working with scale models than in building buildings by hand. Experience in the field, which admittedly has been de-emphasized in the past, can be and should be a part of architectural education; but this can come to a large extent during the period of architect-in-training after graduation, and (or) before or during college in the summertime and thus supplement the academic curriculum rather than be a part of it.

(Continued on page 254)

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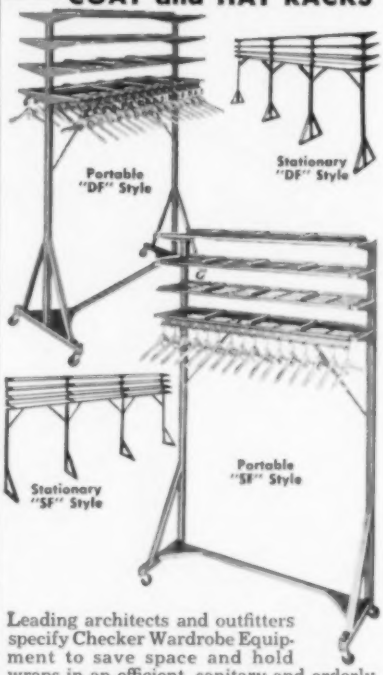

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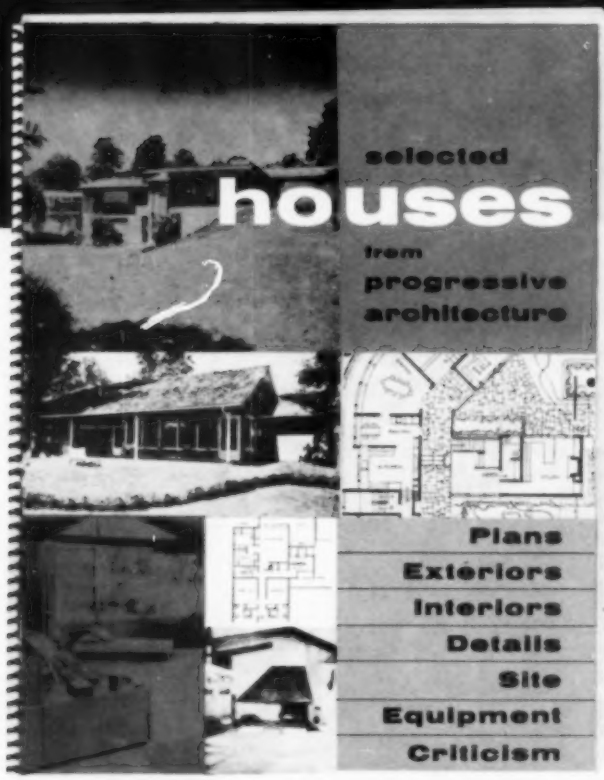

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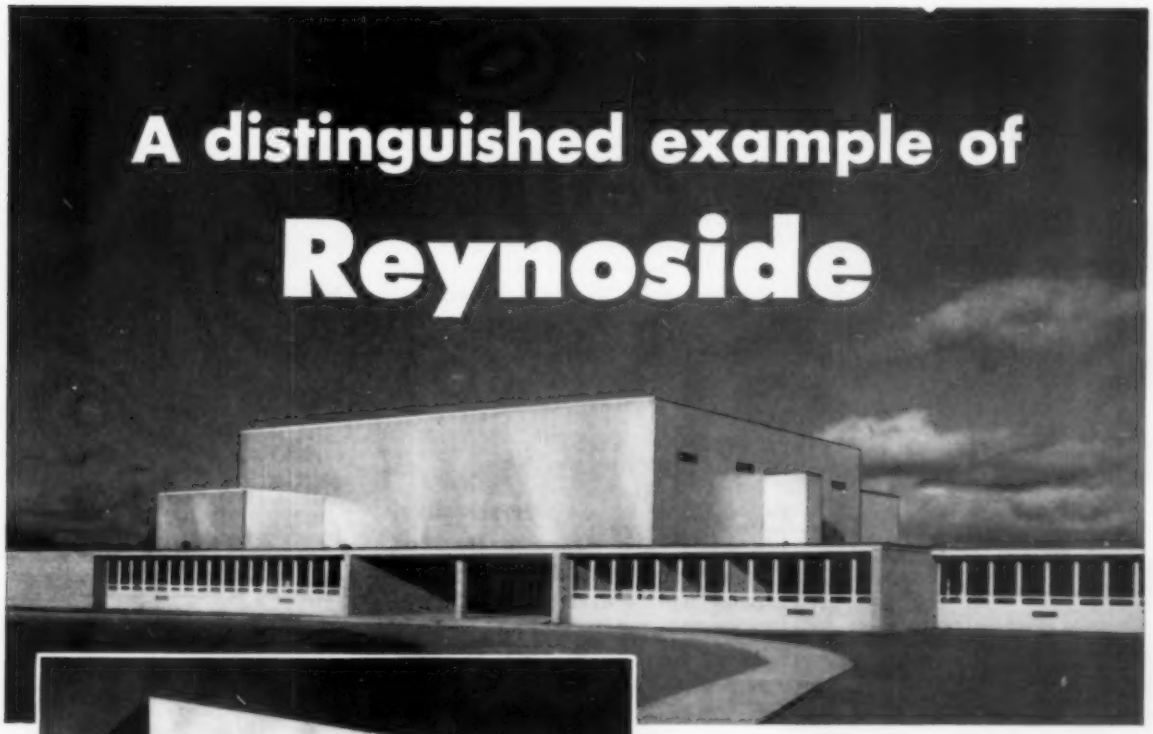

Shawano High School, Shawano, Wisconsin

Architect:
Edgar A. Stubenrauch & Associates, Sheboygan, Wisconsin

General Contractor:
Palisades Construction Company, Appleton, Wisconsin

Jobber-Erectors:
Wisconsin Bridge & Iron Company, Milwaukee, Wisconsin

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JM

Johns-Manville
COLORLITH

p/a views

(Continued from page 250)

One of the weakest links in the architectural educational chain is the attention given to the aspect of surfaces which meet the eye and I particularly liked the suggestion that students take part in decorating or re-decorating projects. After World War II, and before we moved into our new building, our students were distributed around the campus in design groups, each occupying an old dilapidated house on the verge of collapse. As a part of the design program these men were given an opportunity to see what they could do to improve their quarters. Working with what materials they could obtain and doing all the work themselves, they achieved some very good results in space use, color, form and texture, and this seemed to me to be one of the most valuable experiences which a group of students could have.

On "the second way in which architectural education is going to change" in subjects auxiliary to design—namely, history, graphics, and structural engineering—I have no quarrel with the point of view expressed. I would only point out that what is advocated is actually taking place; perhaps not as imaginatively or as completely as it is envisioned by the author, but it seems to me that the movement is definitely in the direction indicated. This is far too cursory a way of disposing of a thoughtful exposition in which several helpful suggestions are made and many good ideas advanced. All I can add at this point is a recommendation that anyone who has not already done so read this article.

I shall await with anticipation the text on drafting for which the need has been pointed out.

PROGRESSIVE ARCHITECTURE is to be congratulated on printing a stimulating article on a subject—education—which cannot too often be brought out into the open for discussion. HAROLD BUSH-BROWN

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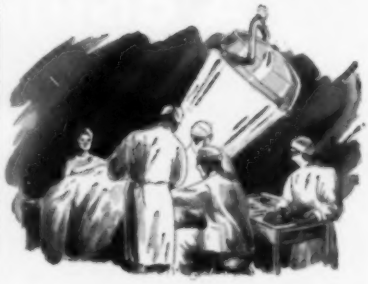

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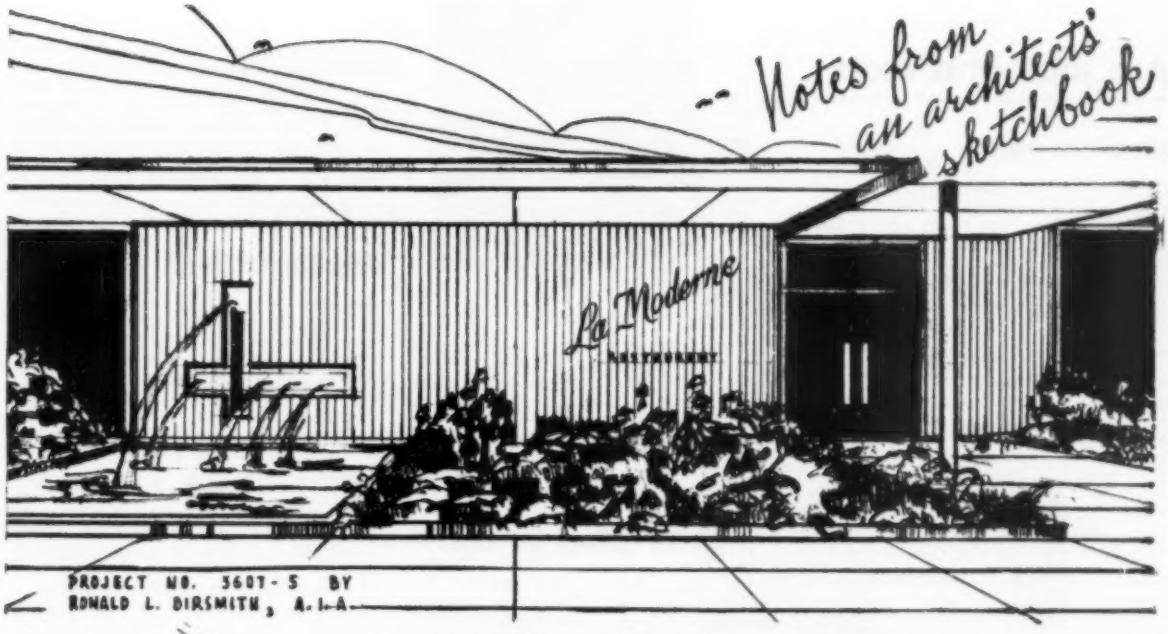

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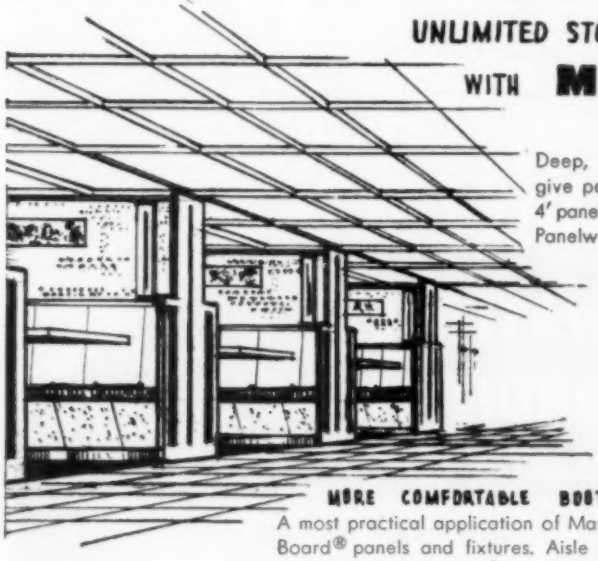

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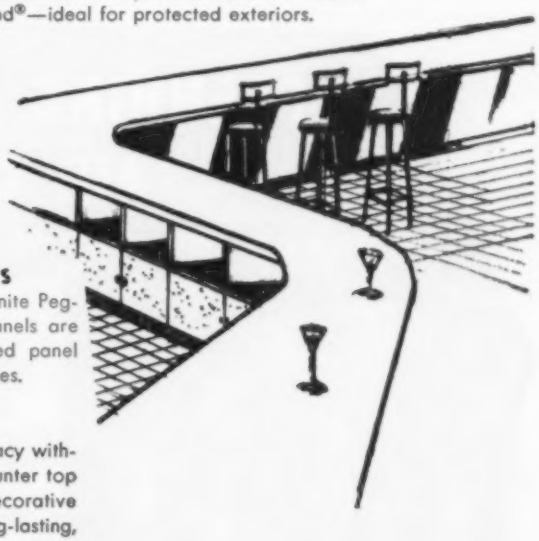

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(Continued on page 260)

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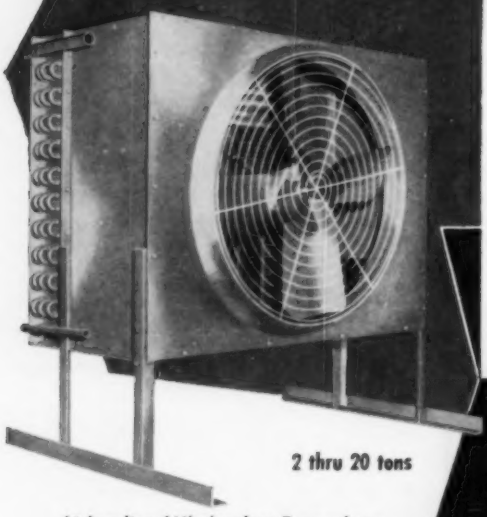

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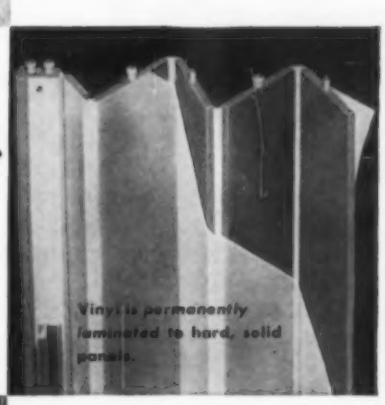

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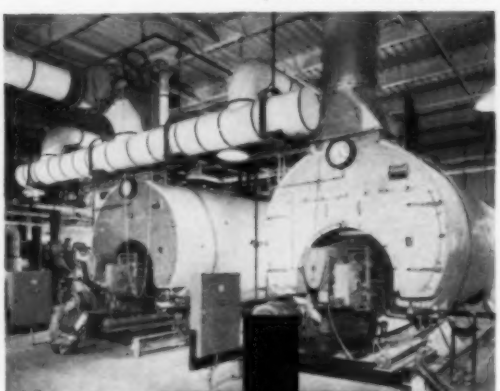

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JOBS AND MEN

(Continued from page 256)

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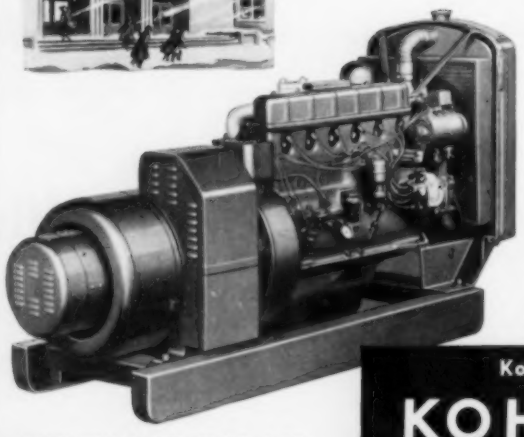

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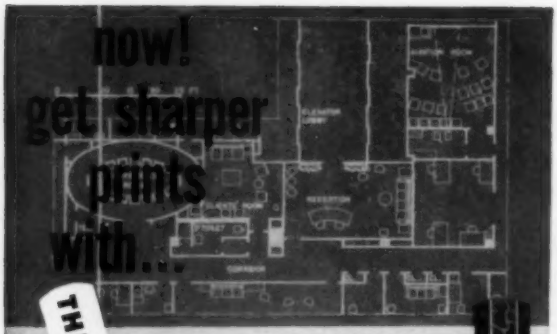

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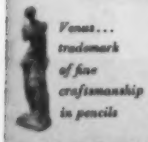

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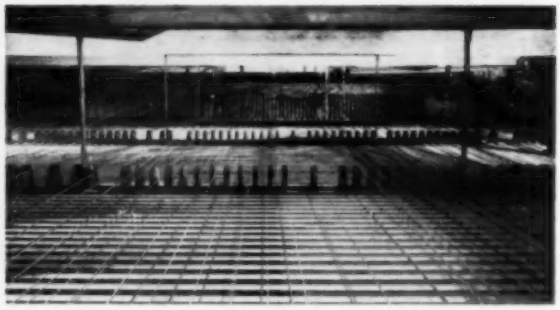

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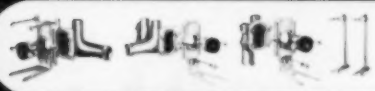

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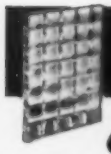

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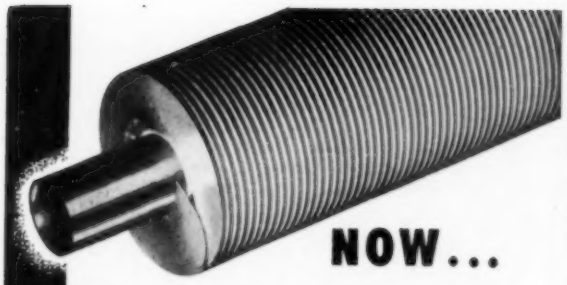

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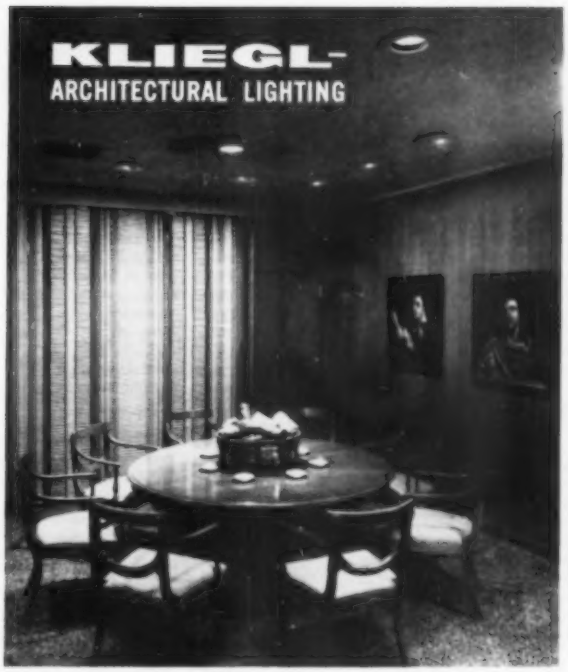

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American Lead Pencil Co. 262
American Olean Tile Co. 27
Amtico Flooring Div., American Biltrite Rubber Co. ..... 3rd Cover
Anemostat Corp. af America 12
Armstrong Cork Co. 56, 57

Barber-Colman Co. 186
Bayley, William, Co. 208
Bethlehem Steel Co. 218
Bilco Co. 178
Blue Ridge Glass Corp. 158
Bradley Washfountain Co. 234
Briggs Mfg. Co. 18, 19
Brown & Grist, Inc. 193
Bruce, E. L., Co. 265
BullDog Electric Products Co. 179

Cabot, Samuel, Inc. 263
California Redwood Assn. 202
Cambridge Tile Mfg. Co. 176, 177
Carpenter, L. E. & Co., Inc. 89
Carpet Institute, Inc. 214
Ceco Steel Products Corp. 204, 205
Celotex Corp. 20, 242
Chase Brass & Copper Co., Inc. 188, 189
Clancy, J. R., Inc. 262
Cupples Products Corp. 237
Curtis Companies Service Bureau 207

Davidson Enamel Products Co. 222, 223
Day-Brite Lighting, Inc. 90, 91
Douglas Fir Plywood Assn. 215, 217, 219, 221
Duriron Co., Inc. 2
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Edwards Co., Inc. 88
Ellison Bronze Co. 180

Facing Tile Institute 63
Federal Seaboard Terra Cotta Corp. 31
Flexonics Corp. 232
Flour City Ornamental Iron Co. 80
Flynn, Michael, Mfg. Co. 21

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Homasote Co. 66, 220
Horn, A. C., Co., Inc. 216

Infra Insulation, Inc. 96
Insulite Division 54, 55

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Janitrol Heating & Air Conditioning Divisions, Surface Combustion Corp. 28, 29
Jennison-Wright Corp. 8
Johns-Manville Corp. 82, 254
Jones & Laughlin Steel Corp. 231
Josam Mfg. Co. 87

Kaufman & Fabry Co. 264
Kawneer Co. 213
Kentile, Inc. 35
Kewanee Boiler Div. 258
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Keystone Steel & Wire Co. 84, 85
Kinnear Mfg. Co. 224
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Mahon, R. C., Co. 67
Marble Institute of America, Inc. 24, 25
Masonite Corp. 255
Mastic Tile Corp. of America 230
McLouth Steel Corp. 229
Mengel Co. 83
Metalab Equipment Co. 17
Metal Lath Manufacturers' Assn. ..... 37 to 52
Mississippi Glass Co. 172
Mitchell Mfg. Co. 267

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National Concrete Masonry Assn. 235
National Electric Products Corp. 105
National Terrazzo & Mosaic Assn., Inc. 236
Nesbitt, John J., Inc. 15
Norman Products Co. 6
Norton Door Closer Co., Div. of Yale & Towne Mfg. Co. 154

Onan, D. W., & Sons, Inc. 254
Otis Elevator Co. ..... 2nd Cover
Owens-Corning Fiberglas Corp. 187
Owens-Illinois Glass Co. 239

Paine Lumber Co. 227
Pittsburgh Corning Corp. 191
Pittsburgh Plate Glass Co. 58, 59
Pittsburgh Plate Glass Co., Paint Div. 69
Portland Cement Assn. 261
Prescolite Mfg. Co. 94

Reinhold Publishing Corp. 264, 267
Revere Copper & Brass, Inc. 168, 169
Reynolds Metals Co. 253
Richards, J. Merrill 264
Rilco Laminated Wood Products Inc. 16
Rixson, Oscar C., Co. 86
Robbins Flooring Co. 30
Robertson, H. H., Co. 244
Rowe Methods, Inc. 264
Russell & Erwin Division 4
Ruud Manufacturing Co. 53

Sanymetal Products Co., Inc. 81
Sargent & Co. 92, 93
Sargent & Greenleaf 212
Schieber Sales Co. 246
Silvray Lighting, Inc. 201
Sjostrom, John E., Co. 174
Smith, A. O., Corp. 233
Smith, Jay R., Mfg. Co. 263
Smithcraft Lighting Div. 73
Staedtler, J. S., Inc. 203
Stran-Steel Corp. 64, 65
Sunroc Corp. 190
Sylvania Electric Products, Inc. 167

Thompson Electric Co. 228
Timber Engineering Co. 250
Truscon Laboratories 245

Unarco Air Conditioning Products, National-U.S. Radiator Corp. 247
Unistrut Products Co. 175
United States Gypsum Co. 194, 195
United States Plywood Corp. 72
United States Steel Corp. 70, 71

Vista Furniture Co. 244
Vogel-Peterson Co. 250
Vonnegut Hardware Co. 60

Wasco Products, Inc. 197
Weis Mfg. Co. 243
Westinghouse Electric Corp. 74, 75, 76, 77, 78, 79
Wiley, John & Sons 240
Wiley, R. & W., Inc. 267
Wilson Engineering Corp. 267
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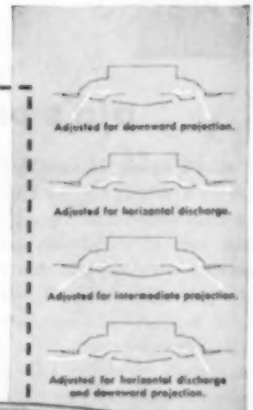
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P.S.

p/a's prize contest: which magazines are these?

I don't think it would be dignified for P/A to run a scrambled-word contest or a crossword-puzzle competition, though that sort of circulation gimmick is becoming very popular in the press and we probably shouldn't overlook it. So here is P/A's answer: the first reader who guesses correctly the names of the magazines identified by number in the paragraphs below gets a free subscription to P/A for one year—or a year's extension of his present one.

It has seemed to me for some time that various magazines dealing with architectural subjects are developing policies, attitudes, and biases which are quite recognizable. It may be amusing, then, to speculate on the ways the same story might be treated in half a dozen places. In order not to hurt any feelings —and avoid the libel laws—let's assume a fairly anonymous piece of design. I suggest:

A telephone booth: a free-standing, somewhat obtrusive structure which rests between the door to the men's room and the door to the ladies' room in my favorite French restaurant on Third Avenue in New York. Can you guess the magazines I have in mind in the following seven paragraphs?

1. The great interest in this bistro-booth story lies in the imagination and the daring of the financier who saw beyond the usual banker's horizon. Says he: "We were willing to gamble on the fact that enough patrons would know that *Messieurs* means one thing and *Mesdames* means another, and that in between lies that great unexplored area of telecommunications, the future of American industry." The Editors also congratulate the Builder, the man with the know-how to make this thing stand up straight when no one else thought it was possible. And the Client, Pierre McPherson, who reports: "This was a *great team:* the Banker, the Builder, the Engineer all worked—and drank—together under my leadership. There was also an Architect, but he doesn't come around for lunch any more; I guess his due bills have run out."

2. We present No. 1526 in this magazine's series of Construction Type Reports. The subject this month is the Restaurant Telephone Booth, which our Research Editor has discovered is an institution going back to Alexander Graham Bell and the days of the early wall-hung saloon-type telephone—and the early hung-over saloon-type architect. In the pages that follow we show you 278 examples of this important design element. Many controversial technical questions are raised here. How should a telephone booth be lighted, for instance? In the example shown on this page, Joe Blow, the architect, felt that a dim light was correct—to conceal the comments written on the walls. Then, should seats be provided in telephone booths? Our Technical Editor points out that the inclusion of a seat in this booth makes it impossible for a stout customer to close the door. However, our News Editor replies that this is a decided advantage to customers at nearby table No. 6, who overhear some very interesting conversations.

3. As another of this magazine's popular Areas of Activity series, we present this month the work of Joe Blow, young Architect who specializes in the design of telephone booths for French restaurants on Third Avenue. Blow has a rapidly growing practice, which should be an inspiration to others tired of the humdrum fields of school or hospital design. Three years ago, his practice was limited—it extended only from 53rd to 58th Streets—but so quickly have his design ideas caught on, so devoted has been his application to the complex, that he now has clients from Yorkville to the Bowery. Joe is an outstanding example of the Architect integrating himself with the community. The President of the Third Avenue Association reported to our Editors: "No one is better known or better liked in local saloons than Joe Blow. His credit is good, he has a fine baritone voice, and he seldom has to be taken home. We think he has a great future in this community."

4. In an exclusive area of mid-Manhattan a new design idea has appeared which the exclusive, fashionable readers of this magazine will love. It is a divine telephone booth. You can adapt this idea to your own home, and your exclusive telephone booth can be as decorative and as corny as you yourself may be. The pictures on this page, taken exclusively for this magazine by Boarden Batten, fashionable photographer, show Mrs. Rocklefellow Harrison using the telephone booth (don't let the sign on the adjacent door confuse you) during a dinner party given for Prince Megolomania IV.

5. Here are 56 *New Ideas* to help you sell houses by using the new design trick—telephone booths. On the pages that follow we show you how to:
Emphasize the privacy of teen-age conversations, while the old folks watch TV.
Build split-level telephone booths, with the telephone on one level and a snack bar on the other.
Promote the indoor-outdoor telephone booth, with a picture window.
Merchandise the new telephone booth materials . . . such as streamlined plastics in housewife colors, for streamlined, pliable housewives.

6. This is the New America! The telephone booth is as exclusively American as the Hawaiian furniture, Chinese lamps, and Scandinavian textiles that we have been showing you, month after month, as the American way of life. It was a good American designer with a good American name—Joe Blow—who invented the Third Avenue telephone booth we show you in this issue—not any of those sinister European architects like Miles van der Roy or Richard Neuter.

7. What are our commercial architectural magazines coming to, Mr. Editor? This month they publish a telephone booth—pure engineering design, with none of the Architecture we learned so painstakingly at *l'Ecole des Beaux Arts*, to add warmth, humanity, and dignity to the bones of the structure. Did *Deux Magots* have a telephone booth like this? Did we show this sort of modernistic telephone booth in the South Seas Embassies we designed for the *Prix de Rome?* I am canceling all of my subscriptions to the current magazines and retiring to the basement with my old, familiar, worn copies of *The Brickbuilder* until this present generation comes to its senses. HENRY BATEMAN BULFINCH III

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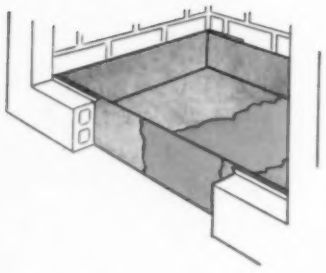

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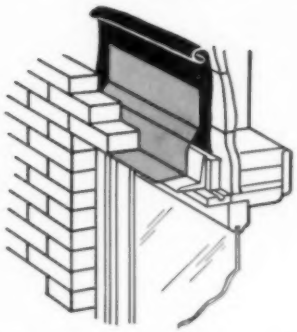

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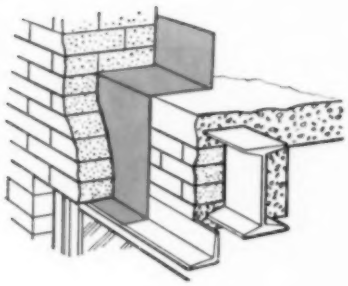

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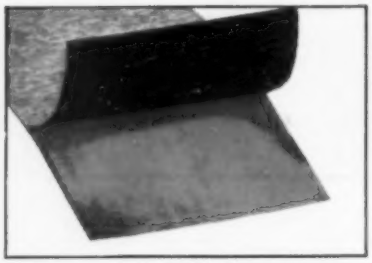
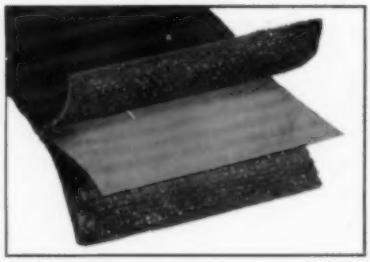
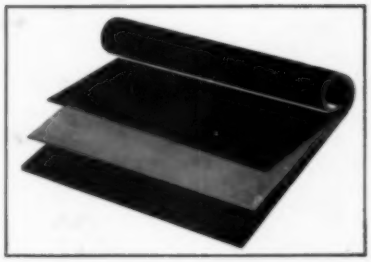
"ELECTRO-SHEET" Is Bonded To Various Materials



High-grade building papers, one or both sides.



Asphalt-saturated fabrics, with ductile mastic bond.



Tough, "rubbery" asphaltic compounds.